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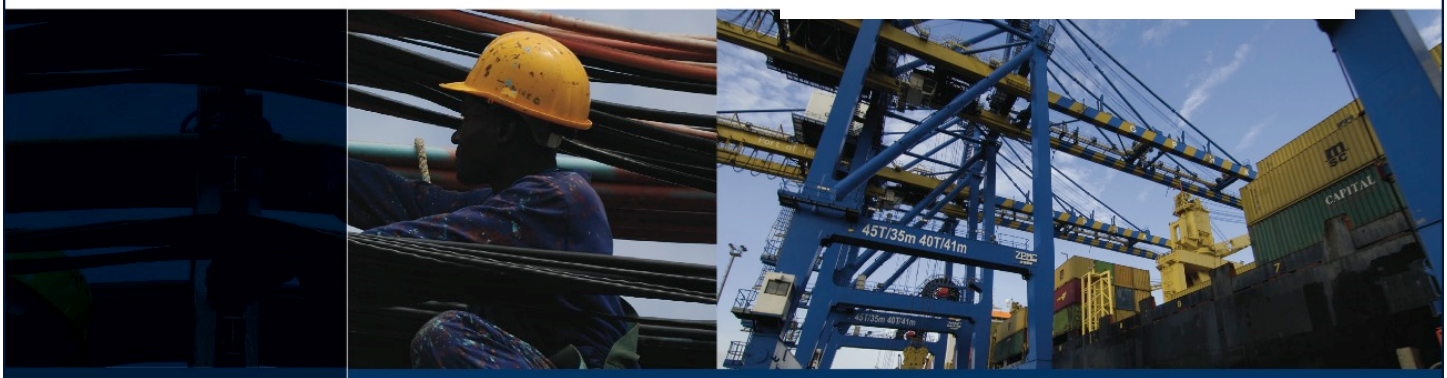

The Performance of the Manufacturing Sector in Tanzania: Challenges and the Way Forward

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Abstract

Tanzania's industrial sector has evolved through various stages since independence in 1961, from nascent and undiversified to state-led import substitution industrialization, and subsequently to de-industrialization under the structural adjustment programmes and policy reforms. The current development agenda, however, has brought industrial development back to be one of the policy priorities. This paper aims at examining the performance of the manufacturing sector, with particular interest in identifying the emerging manufacturing subsectors, drivers of their success, and challenges for sustained competitiveness. The paper shows that manufacturing growth over the last ten years has helped to sustain GDP growth. The growth in manufacturing notwithstanding, it remains largely undiversified, and vulnerable to variations in agricultural production and commodity prices. The most dynamic subsectors in terms of output growth, export growth, production innovation and product diversity are food products, plastic and rubber, chemicals, basic metal work, and non-metallic mineral products. Nevertheless, the domestic value addition is limited by the dependence of imported intermediate goods, signifying limited inter-industry linkages that are important for promoting domestic manufacturing base and employment. Various technological, financial, policy, and administrative constraints remain unresolved and therefore, limiting faster industrial growth and transformation.

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1 Introduction

Industrial development has been an integral part of Tanzania's development strategies in the post-independence era. In fact it was expected by policy makers to lead the process of transforming the country's economy from low productivity and low growth to high productivity and dynamic economy, associated with structural change and sustained income growth.

Since Tanzania inherited a very small and undiversified industrial sector at independence in 1961, various efforts were made and strategies adopted to realize improved industrial development. The evolution of development in the industrial sector stretches from the time of independence to date. It follows from this reality that this paper begins by examining the path that industrial development has taken. It does so with an analytical narrative that describes the evolution of industrial development, institutions and policies in a changing context that has shaped the country's industrial development over the said period. Specifically, the phases through which industrial development has traversed, starts with industrial development in the mixed economy (1961-66), the shift to state-led import substitution industrialization (1967-85), through the period of de-industrialization under structural adjustment programmes (SAPs) and associated policy reforms (1986-95) as well as the period of a return to the development agenda in which industrialization occupies a central role in enhancing economic transformation.

Generally, these economic reforms have made noticeable differences in manufacturing sector performance especially since the 1990s. Nevertheless, the share of the manufacturing sector to GDP and its growth rate has remained relatively stagnant over the past decade. While some manufacturing subsectors have grown constantly over time, others have remained inert. For policy purposes and to draw relevant lessons for the manufacturing stakeholders to press forward, this study intends to investigate the diverging performance of manufacturing across subsectors and firms in order to underscore the secrets of success of the subsectors/firms that are doing well. The underpinning reason for the study hinges on the desire to learn from practical experience of the successful cases in the country, and thus to correctly guide policies that are focused to the acceleration of manufacturing growth.

The rest of this paper is organized as follows: the next subsections highlight the objectives of the study, methodology and the criteria for the selection of emerging manufacturers. The next section details the evolution of the manufacturing sector in Tanzania. Section 3 provides an overview of the performance of the country's manufacturing sector while Section 4 analyses the sector's key characteristics based on surveyed information, and then identifies emerging manufacturing subsectors and firms. Elements of the successful emerging manufacturing subsectors and firms are examined in Section 5. Section 6 gives an account of the sustainability prospects of the emerging, or sunrise, firms while Section 7 outlines their major challenges. Conclusion and policy implications are given in Section 8.

1.2 Objectives of the study

The main purpose of this study is to examine the manufacturing industry in Tanzania with a particular interest in identifying the emerging manufacturing subsectors and firms so as to discover the drivers that determine their success. Specific objectives of the study include:

i) to analyse the evolution of the manufacturing sector in Tanzania;

ii) to provide an overview of the performance of the manufacturing sector;

iii) to identify the rising manufacturing subsectors and firms in terms of domestic production, sales and exports;

iv) to analyse the success elements of the identified players;

v) to evaluate the strength of observed performers with reference to the sustainability of their relevant subsectors in utilizing (in whole or in part) the entire manufacturing value chain;

vi) to underscore the challenges of and expectations for further growth; and

vii) to produce policy recommendations for further expansion in the manufacturing section.

1.3 Methodology

This research incorporated a wide range of different experts on manufacturing and taxation. Consultations took place with the Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA), the Confederation of Tanzania Industries (CTI), the National Bureau of Statistics (NBS), Ministry of Industry, Trade and Marketing (MITM), and the Tanzania Revenue Authority (TRA) to understand the key policy issues related to Tanzania's manufacturing developments. The rationale for this crosscutting approach was to exchange views and opinions as well as to involve and enlighten all stakeholders on the key aspects of implementation of the sustainable industry development policy together with other related national development policies and strategies.

The study was approached quantitatively. Both primary and secondary data were employed in the analyses. The two main levels of analysis were done comprehensively: (i) desk review of the available documented information and (ii) primary and secondary data analyses.

Desk review

A comprehensive desk review of the manufacturing sector policies, performance, status, problems, constraints and challenges has been conducted to expound the scale and limitations of the research problem at hand. A review of the literature covered relevant published documents on the sector including reports of the government, CTI, TCCIA and other sources of information covering the years 2001-10.

Secondary data collection

Requests for data and relevant documents were submitted to the Tanzania Revenue Authority (TRA) and the National Bureau of Statistics (NBS). The TRA released manufacturing tax data for ISIC codes 15 to 37 and the NBS provided a statistical report of Annual Survey of Industrial Production and Performance 2008; National Accounts; and macroeconomic data of the other key variables.

Primary data collection

Primary data were collected through interviews with various tiers of management in manufacturing firms. Field instrument was a semi-structured questionnaire which was directed to the selected manufacturing firms in the country. Sampling universe of types of industries in the country was considered. Eight sampling units were identified, including: Dar es Salaam, Tanga, Kilimanjaro, Arusha, Mara, Mwanza, Iringa, and Morogoro. These regions were chosen from the list of tax data supplied by the TRA, and the criterion was the regional weight of industrialization importance.

Two possible cost factors were taken into account: first, the cost efficiency of data collection; and second, the cost of incorrect inferences in case of wrong data, 84 manufacturing firms were selected to represent the population of industrial firms in the country. For good reasons, *non-*

probability sampling technique was used to choose the elements of the sample. That is, normal deliberate or judgment sampling, which aims at accommodating only some of the earmarked members of the population. While we are aware of the possible dangers of this approach, including the fact that one element may have a greater chance of entering the sample or less chance than other element in the same population; the danger of bias; and that sampling error cannot be estimated in this approach, we applied it owing to the nature of the study since it explicitly targets emerging manufacturing firms. It is well known that in this type of study, non-probability sampling is convenient and cheap. Quota sampling was done with respect to the selected units based on the density of industrial firms in the respective regions. It was our intention to interview 54 firms in Dar es Salaam, seven in Tanga, five in Kilimanjaro, eight in Arusha and one in Mara. From Mwanza we expected to interview three firms, in Iringa and Morogoro one and five, respectively.

There are several groups of industries, so we stratified the sample frame to make certain that there was representation of all the emerging subsectors. We decided on proportional representation of the emerging manufacturing subsectors in the sample to avoid selection bias.

Criteria for choice of emerging manufacturing subsectors and firms

For the choice of the emerging manufacturing firms, we based our selection on the industry performance with respect to the Sustainable Industry Development Policy (SIDP). Its main purpose is to set out the path for the sustainable development of Tanzanian industry in the medium term, with a focus on the following objectives (URT 1996):

i) human development: creating employment, poverty alleviation, providing basic needs and sustainable livelihood;
ii) sustained economic growth: promoting capital and intermediate goods production;
iii) economic transformation and integration in the domestic economy: from agrarian to industrial sector; and establishing forward–backward linkages;
iv) external balances: import substitution and export promotion;
v) equitable development: rural and urban; SMEs versus large-scale enterprises;
vi) sustainable environmental conservation; and
vii) development of economic agents: entrepreneurship and advancement of informal sector operators.

From the SIDP we identified different target policy variables to be used as criteria for determining the types and nature of the rising manufacturing industries in Tanzania. The following target policy variables (criteria) and measures were used to gauge the rising manufacturing firms:

i) emergence of new firms, products and market penetration;
ii) increase in sales and revenues or business profitability;
iii) expansion in exports of manufactured goods;
iv) increase in use of human resources, i.e., labour and employment and
v) acquisition of new production technologies.

Sectors and firms that meet some of these qualifications are included in the category of emerging manufacturing subsectors/firms. Market penetration means the extent to which potential customers have been reached. It is a measure of the percentage coverage of the potential market.

Increase in sales and revenue reflects profitability, exports expansion explains the rise in internationalization, while the acquisition of new technology captures the sophistication of the production process. Employment expansion implicitly indicates the growth of employing firms and so it is one of the applied criteria.

Sampling of the emerging subsectors and firms was done from the secondary data supplied by the TRA, followed by primary data collected to provide further support for a rigorous analysis. Before delving deeper into the analysis, it is important to provide a succinct discussion on the evolution of the manufacturing sector in Tanzania. This is crucial, as it puts the subsequent analysis into context. The next section provides such information.

2 Evolution of the manufacturing sector in Tanzania

2.1 Perspective and evolution of the manufacturing sector

The transition from a colonial state to a centrally planned economy and then towards a market and private sector-led economy has been characterized by a complex historical process of economic change in Tanzania. Economic changes were shaped by the incentives structure and varying perceptions, behaviour and norms regarding market imperfections and failures. In the course of history since independence, the state redefined its functions and that of the private sector a number of times. This is not atypical as governments define rules of the game in any economic system. In the opinion of Baumol (1990), 'it is the rules and not the entrepreneurs that undergo substantial changes from one period to another'. Baumol (1990) compellingly argues that, entrepreneurs (or agents) act largely depending on the rules of the games—the reward structure of the economy—that governs payoffs from the entrepreneurial activity. This is a theoretical view which shows that when institutional structure and transformation of the manufacturing industry is assessed, changes in the rules should be considered relevant since they have implications on the performance of the sector. Specifically, inefficient and counterproductive rules of the game, which are also deemed to be unjust, should spontaneously disappear as they do not serve the interests of the participants that practise them. In other words, there is often an implicit evolutionary assumption in economic theory that whatever survives represents, in some sense, the survival of the fittest. The theory is also applicable to the competitive manufacturing industry.

Although there have been arguments for and against the political system with regard to the development of the manufacturing sector in the country, economic literature clearly asserts that there is no guarantee that the political system, in general, will pick the best institutional structure. Olson (1982) says that the existence of powerful special interest groups in a country strongly influences institutions and economic development. However, according to North (1981) good institutions might not be chosen by those with political power because they do not necessarily maximize their wants (including those of the allies), which are usually pecuniary gains. This means the powerful groups may not have credible commitment to enhance development of manufacturing and other sectors. Having outlined the theoretical drivers of reforms, the following subsections discuss various phases (reforms) that have been adopted in Tanzania improve the manufacturing sector.

Industrial development in the early post-independence period, 1961-67

In the early 1960s, the national economic agenda focused on growth with little attention to structural change or ownership. The colonial pattern of import substitution, which was largely characterized by processing industries and simple consumer goods, was continued. Indeed, following the 1961 independence, production activities in Tanganyika (now Tanzania) were

extensively rooted in labour-intensive primary commodities reflecting the colonial legacy on industrial policies from the British. At that point, there were 220 manufacturing enterprises employing 200,000 out of a population of nine million (Skarstein and Wangwe 1986). By then, the industrial sector contributed about 4 per cent to GDP. However, a large part of the productive factories which existed at the time in drinks, agro-processing and consumables such as Coca-Cola, East African Breweries, Tanganyika Packers, British American Tobacco, Metal Box and Bata shoes were foreign owned. Moreover, many of these large-scale companies produced either for urban consumption or for export while small-scale firms concentrated on the rural market. In order to reverse the situation, the Foreign Investment Protection Act of 1963 was designed to attract foreign direct investments (FDI) to fill the capital gap, as is explained later.

More importantly, between 1961 and 1967, industrial development in Tanzania was defined by the introduction of the 3-year development plan (TYP) between 1961 and 1964 followed by the first 5-year plan (FFYP) between 1964 and 1969. The TYP aimed at promoting growth mainly through increasing investments in activities that were expected to bring quick and high returns. The strategy, which was implicit in the first development plans after independence, was focused on a growth agenda. The emphasis was placed on import substitution starting with simple consumer goods. However, this import substitution model was adopted rather uncritically within the colonial pattern of industrial development. Indeed, the investment programme which was proposed in the early 1960s was to be implemented through enhancing local and foreign private investment. A relatively low degree of regulatory control was exercised to promote private domestic and international investment in the economy. Specifically, the Foreign Investment Protection Act of 1963 was aimed at attracting FDI. Tax incentives were provided and existing investment opportunities publicized in a bid to expand the pool of capital inflows. The aim here was to use foreign capital to solve what was seen as the problem of scarcity of capital. This was in line with the post-war models of development such the Harrod-Domar model which put emphasis on physical capital accumulation as a solution to the perceived shortage of capital. Nonetheless, the outcome was not encouraging. Consequently, the Arusha Declaration was formulated in 1967 promulgating socialism and self-reliance.

State-led industrial development, 1967-85

In 1967 the Arusha Declaration was introduced, in which the principles of socialism and self-reliance were enunciated. The promulgation of the Arusha Declaration in 1967 catapulted the principles of socialism and self-reliance on major means of production. It advocated the utilization of local resources as primary endowments in production. In effect, the Arusha Declaration signalled the end to low level direct regulatory control and the reliance on foreign private investors.

The main consequence of the Arusha Declaration was the change in the ownership pattern whereby the major means of production were nationalized and most of the major subsequent investments were made in public enterprises. Increased state control in manufacturing saw the introduction of an industrial licensing procedure under the National Industries Licensing and Registration Act of 1967. The Arusha Declaration introduced state-led import substitution, state-led expansion of manufacturing and a revision of ownership and management of established entities in favour of direct ownership and management of state organizations. Foreign ownership of production was subsequently limited to joint ventures with the government. Foreign investors participated through management agreements and as suppliers of equipment for industries. Direct regulatory control in manufacturing was then consolidated through the establishment of the National Development Corporation (NDC) while trade was largely operated under the State Trading Corporation (STC).

The Arusha Declaration also saw an increased role of the government in setting, implementing and monitoring monetary and exchange rate policies. For instance, in 1971, the National Price Control Advisory Board was set up to fix and oversee prices of initially a limited number of manufactured products. Also, the Price Control Act of 1973 was aimed at limiting monopoly pricing power of domestic producers thereby allowing the government to exercise full price control in the manufacturing sector (Mongi 1980).

Stringent regulations were introduced to monitor capital flows in and out of the country. For example, the 1973 Finance Act gave the government a carte blanche in administering the foreign exchange market. However, the shortage of foreign currency began to emerge following insufficient foreign earnings from trade in goods and services (Lipumba and Kasekende 1991), a salient feature of Tanzania's economic woes of the era. The global oil crisis of 1973 further exacerbated the shortage of foreign exchange necessary for importation of capital and intermediate goods. Consequently, the country experienced deteriorating balance of payment which adversely affected industrial production between 1973 and 1974 (Skarstein and Wangwe 1986).

These shortcomings prompted a launch of discussions to chart out a long-term industrial strategy. This was projected to be a 20-year plan (1975-95) and be implemented in four 5-year plans. The long-term industrial strategy involved three main elements: the identification of national goals that could be achieved through industrial development, allocation of resources (human, capital, foreign exchange and natural resources) and selection of priority industrial activities.

The 20-year industrial strategy was devised to improve the nation's industrial base. Specifically, it adopted the tenets of a basic industrial strategy aimed at increasing the relative importance of the manufacturing sector and reducing dependence on imports. The Basic Industrial Strategy (BIS) was adopted for its score on structural change and self-reliance. Industrial goods were to meet basic needs of the population, and the intermediate and capital goods of the economy. The latter was to be achieved through efficient utilization of domestic natural resources to produce a wide range of intermediate and capital goods. Industrial production was primarily targeted to meet domestic demand. Exports were to result from an extension of the domestic market. The share of the manufacturing value added (MVA) in GDP was projected to grow from 8 per cent in 1975 to 18.8 per cent in 1995.

Furthermore, in the early 1980s currency overvaluation was depressing the export sector, and the shortage of foreign exchange and imported intermediate inputs were adversely affecting industrial performance. One response to this situation was the introduction of an export rebate system (ERS) in 1981 to serve as a subsidy for producers of horticultural goods, alongside a general retention scheme (GRS) for exporters to deposit part of their foreign exchange earnings for the purpose of importing inputs. Additional home-grown adjustment programmes were designed to deal with the crisis. For instance, the national economic survival programme (NESP) came into existence in 1981-82 with the aim of reviving the economy through the use of the nation's internally generated resources. But it did not achieve its goals as chronic economic malaise continued to persist.

In sum, the economic crisis in Tanzania continued into the mid-1980s. This was not helped by the fact that the environment was quite protective, with import licensing, exchange controls and price controls based on the cost-plus principle. In the end, these controls created a business environment that did not help the industrial sector build the capability to compete. Indeed, low levels of capacity utilization in the sector were frequently accompanied by the shortage of foreign exchange to finance the imports of intermediate inputs (Wangwe 1983).

Industrial development under structural adjustment programmes, 1986-95

Having experimented with home-grown recovery programmes, the government of Tanzania eventually adopted the policy package under SAPs of the international financial institutions (IFI) in 1986. Specifically, the Economic Recovery Programme (ERP) was adopted with the objective of restoring economic stability and accelerating structural reforms in order to create a sustainable position for the country's balance of payment, correcting budget deficits, cutting down inflation, reforming microeconomic policy framework and increasing incentives to agricultural producers.

Trade sector reforms based on adjusting the exchange rate to promote exports, adjusting tariffs, liberalizing internal trade, soon followed under ERP. The ERP included various other reform packages aimed at promoting output and facilitating trade including agricultural policy reforms,[1] monetary, credit and financial policy reforms, civil service reform, social services sector reform, parastatal restructuring and privatization. During ERP implementation, the government adopted a crawling peg exchange rate regime in an attempt to depreciate the then overvalued domestic currency.[2] This caused the nominal exchange rate to depreciate over subsequent years. A relaxation of exchange controls increased access for import-starved manufacturers to the raw materials and spare parts necessary for improving capacity utilization.

One implicit assumption of economic reforms and industrial restructuring is that enterprise level inefficiencies are a reflection of distorted or inappropriate macroeconomic policies. It is suggested that if appropriate adjustments could be put in place at the macro level, enterprises would receive the right signals through the market. In response, enterprises would restructure appropriately. According to this approach, appropriate changes in policies (e.g., on market prices, realistic exchange rate, interest rates, competition) are expected to induce restructuring by favouring the expansion of efficient enterprises and contraction of inefficient ones. This approach has been promoted by the World Bank especially in its earlier publications (World Bank 1989, 1991). The approach, in general, advocates that reform and restructuring of industry are essentially macroeconomic issues which require restructuring the supply side by putting in place appropriate macroeconomic and sectoral policies.[3]

In a nutshell, during the early period of reforms, priority in resource allocation was shifted from creating new capacity in the public sector towards rehabilitating public industrial enterprises. Experiences with these rehabilitation initiatives showed that technological learning has been very limited, indicating that the implementation of rehabilitation programmes in the context of economic reforms had not contributed to raising the level of technological capabilities (Wangwe 1993). Note that there are four indicators of technological learning, i.e., the degree of local participation in the identification and implementation of the rehabilitation programmes; the balance of the output and the learning objectives; the extent of upgrading technical and managerial skills through training; and implications on the domestic capability to manufacture spare parts and components. Remarkably, on all the four counts, rehabilitation programmes in Tanzania were found to have paid little attention to the question of raising the level of technological capability, suggesting that the rehabilitation efforts were not sufficient for

[1] These included increasing producer prices, improving agricultural marketing and distribution and restructuring cooperative unions.

[2] By 1984 the overvalued exchange rate and excessive price controls had resulted in extremely high effective rates of protection (ERP). EPR for the entire manufacturing sector was no less than 470 per cent in 1984 while overall industrial protection had risen to 526 per cent in the same year from 134 per cent in 1966 (Lundahl and Ndulu 1987).

[3] However, over time there has been a shift in this approach towards a recognition of institutional and enterprise level action to complement macroeconomic and sectoral policies (World Bank 1989; Lieberman 1990).

supporting the industry to withstand competition from imports (Wangwe 1995). In other words, technological learning and acquisition of technological capability were not an important part of the process of industrial deepening and the implied qualitative changes in the structure of production. With regard to technological development and growing industrial complexity, there was a reversal characterized by industrial shallowing, e.g., in textiles (producing gray material instead of printed products).

Return to industrial development as a development agenda, 1995-2013

From the mid-1990s the policy stance showed indications of bringing the question of industrial progress back to the development agenda in the context of market orientation and private sector-led development. Specifically, in 1996, a 25-year Sustainable Industrial Development Policy for Tanzania (SIDP2020) began to be implemented with the aim of enhancing sustainable development of the industrial sector. SIDP accords priority to employment creation, economic transformation, and equitable development and seeks to strike an appropriate balance between import substitution and export orientation. Under SIDP, the private sector is recognized as the main vehicle for making direct investments in the sector while the government is tasked to provide an enabling investment environment. Furthermore, under this arrangement, the government is responsible for making direct investments in industries deemed by the private sector to be unprofitable despite the fact that their activities may be of critical importance to overall development goals. The strategy had to be implemented in three phases. Phase I (1996-2000) was for a short-term programme to rehabilitate and consolidate existing industrial capacities. Phase II (2000-10) was a medium-term programme to generate new capacities in areas with potential for creating competitive advantage through the use of efficient technology and learning process. In this phase the emphasis was put on initiating production of intermediate goods and light capital. Phase III (2010-20) encompassed a long-term programme to achieve major investments in basic capital goods industries to ensure consolidation of the industrial structures developed in the first two phases.

Also, Tanzania adopted the Development Vision 2025 in 1999 with an emphasis on the role of the industrial sector for development so as to ultimately make the nation semi-industrialized by 2025. It follows that Vision 2025 recognizes the leading role of the industrial sector in transforming Tanzania's economy.

To augment the efforts to attain SIDP goals, the Export Processing Zones (EPZs) Act was passed in April 2002 and its implementation started effectively in March 2003. The objectives of EPZs were to attract and promote investments for export-led industrialization, to increase foreign exchange earnings, to create and increase employment opportunities, to attract and encourage transfer of new technologies and to promote processing of local raw materials for export (value addition). Incentives offered by the Act included a 10-year exemption on corporate taxes, remission from custom duty, VAT and other taxes on raw materials and goods of a capital nature that are related to production in EPZs, authorization to sell 20 per cent of produced goods on the domestic market, access to the export guarantee scheme and unconditional transfer of profits, dividends, loyalties, just to mention but a few incentives.

Moreover, in June 2010 an Integrated Industrial Development Strategy (IIDS) 2025 was also adopted to promote the efforts to achieve the SIDP goal of bringing the economy to a state of sustainable industrial development. It was formulated with a view to provide concrete strategies to implement SIDP 2020 and to build a competitive industrial sector by putting in place a competitive business environment and improving existing development corridors, concentrated infrastructure development and promoting agriculture-led industrialization. Under this arrangement, the MVA was projected to grow at 15 per cent per annum. The IIDS envisages an

improvement of a gateway port for the region and the promotion of economic development zones for growth and infrastructure development. It also articulates an industrial village concept whereby opportunities are created for the growth of micro and small enterprises. The strategy targeted six subsectors: agro-processing, textiles, leather, fertilizer and chemicals, light machinery and iron and steel.

In sum, recognizing that the public sector might not perform efficiently, and that it had not been able to promote the manufacturing sector during the socialist era in Tanzania, the main emphasis of the economic recovery programmes from the early 1980s was on the need for greater reliance on market institutions/forces, and thus to increase private sector participation in the development process. From 1992 the goal of reforms continued to be the attainment of sustainable economic growth that focussed on transforming the public sector to serve private sector-led and market-oriented economy. In essence, this was particularly aimed at aligning policy reform programmes with institutional orientation that was then predominantly parastatal or public. In this view, the policy shift towards market orientation and private sector development also led to the articulation of the Sustainable Industrial Development Policy (SIDP) covering the period of 1996–2020 (URT 1996) which succeeded the BIS, 1975–95.

Nevertheless, if criticism is to be offered on the country's reform measures, it has to be the outpouring of policy documents that are complementary to the SIDP, and that are directed towards the realization of the country's development vision (Vision 2025) and the fact that these proposed policies possibly are beyond the government's capacity to implement (Wangwe and Van Arkadie 2000).[4] Indeed, there are numerous policy reports that contain long lists of proposed actions but fail to give clear priorities as to what could be achieved realistically under existing administrative and financial constraints. In addition, integration of all these policies in a common national framework has not been adequately ensured.

All in all, in efforts to speed up manufacturing growth, it is important to understand the characteristics of the changes that have already happened in the sector and the factors behind the success of the emerging subsectors and sunrise firms. Understanding the forces behind the realized achievements is significantly important to industrial policy-making, knowledge dissemination, and hence growth and development to support the goal of the Vision 2025's industrial component; i.e., to become a diversified and semi-industrialized economy with a substantial industrial sector comparable to that of the typical middle-income countries (URT 2005). It is in this context that the next section provides an overview of the performance of the manufacturing sector in Tanzania.

3 Overview of performance of manufacturing sector

As highlighted in the previous section, Tanzania's manufacturing sector has been transformed over time, reflecting changes in national policies, varying domestic demand and the world market dynamics. Importance of the manufacturing sector to the national economy has varied across different periods since independence, however, in the recent years its contribution to the national income and hence its importance has been on the rise. Industrial structure, policy, output composition and magnitude have experienced notable changes over time. Here we briefly

[4] See also Van Arkadie and Do Duc Dinh (2004) for a comparative commentary of economic reform measures between Tanzania and Vietnam where the latter's economic reform measures have been more successful than in Tanzania.

review the recent dynamics in the sector, the guiding key policies and the status of manufacturing output and sales.

3.1 Output pattern and manufacturing growth

Industrial development in the early post-independence period (1961-67) generated a minimum albeit steady impact as far as manufacturing growth was concerned. Indeed, some elements of import substitution and diversification began to take shape notably on aluminium sheets, screws, nails, wire, enamelware and razor blades, paper, glass, printing and wood products. Gradual success of these two industrial policies managed to yield a 50 per cent increase in the number of manufacturing establishments between 1961 and 1965. In addition, there was a notable increase in the manufacturing ratio of manufacturing value added (MVA) to GDP and labour productivity. However, despite commensurate gains in manufacturing, the level of industrial output remained comparatively low—only 6.6 per cent of total production in 1966, which was well below the anticipated 10 per cent level (Rweyemamu 1973).

Note, however, that Kenya had been a priority investment destination in East Africa during the colonial period and this put Tanzania at a relative disadvantage footing in industrial development. It is not surprising, then, that the country's terms of trade with its East African neighbours remained unimpressive with recorded episodes of current account deficits between 1962 and 1964. According to the data from Rweyemamu (1973), net imports from Kenya and Uganda grew by 22 per cent and 12 per cent, respectively during the three year period. These regional trade imbalances led to negotiations between Tanzania and its neighbouring countries which culminated in the signing of the Kampala Agreement in 1964 that was designed to restructure and rationalize the distribution of industries across the East African region to attain a degree of equity among the nations.

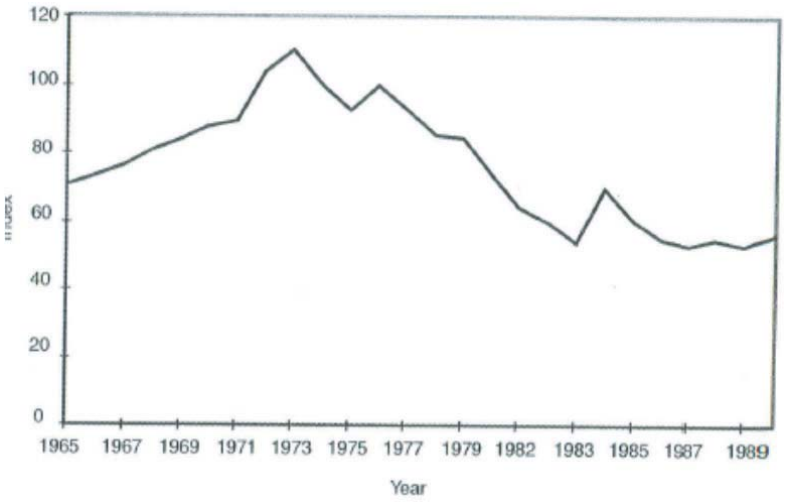
Note also that in spite of the incentives provided for by the Foreign Investment Protection Act of 1963, the response from the private sector fell below expectations. The failure of foreign capital to respond to the range of investment incentives offered by the government posed a problem of how the then newly independent Tanzania could mobilize resources for industrialization. Moreover, the absence of a significant local entrepreneurial class hindered efforts to localize the industrialization process. It was not surprising then that these issues in combination influenced the timing and content of the Arusha Declaration.

As explained earlier, the 1967 Arusha Declaration brought about the genesis of state-led industrial development that lasted until 1985. During this period, state ownership of industry increased such that by 1973, public sector contribution to GDP had risen to 32 per cent from 5 per cent in 1966 (Szirmai and Lapperre 2001) and accounted for 46.7 per cent of total manufacturing employment in 1973 (up from 15.5 per cent in 1967) (Skarstein and Wangwe 1986). Importantly, industrial production during this period had some initial successes, particularly between 1963 and 1969 (Rweyemamu 1973).

Note also that Tanzania recorded its history's most rapid growth of MVA for enterprises employing ten or more people between 1967 and 1973 (see Figure 1).[5] It is also worth noting that this increase in the contribution of manufacturing coincided with an increase in both absolute and relative labour productivity.

[5] In 1973, labour productivity was 44 per cent higher than in 1967.

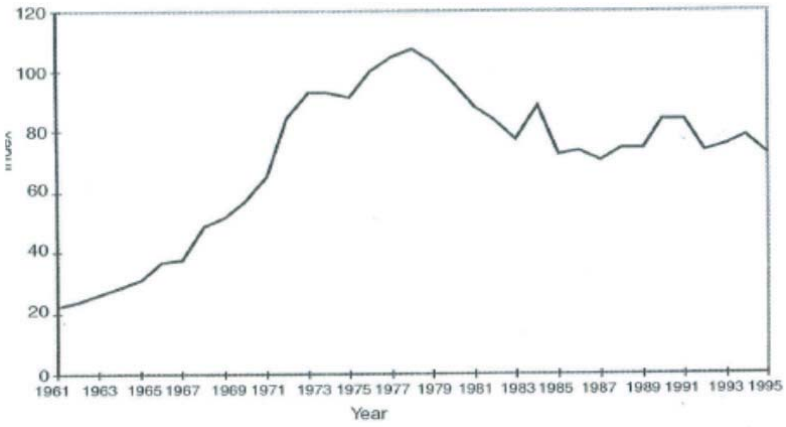
Figure 1: Index of manufacturing labour productivity between 1965 and 1990 (establishments with 10 or more persons engaged, 1976=100)



Source: URT (selected years).

The state-led initiative, however, weakened the export sector due to currency overvaluation and shortage of foreign exchange for importing intermediate inputs. With the failure of home-grown prescriptions, the government of Tanzania adopted the SAPs for the period 1982/83 to1984/85 to improve the availability of foreign capital inflows. Once again the initiative was unsuccessful, because the government this time could not agree to IMF conditions. But eventually the decline in output and productivity was arrested in 1984 and later stabilized between 1984 and 1989 (see Figure 2).

Figure 2: Manufacturing gross value added between 1961 and 1995 (establishments with 10 or more employees, 1976=100)



Source: NBS (1995a, 1995b, 1995c).

It is, however, important to note that overall the comparative levels of labour productivity continued to fall in Tanzania relative to other developing economies in Asia such as China, India, and Indonesia.[6] Specifically, labour productivity in manufacturing picked at 11 per cent in 1973 before it started to generally fall up until 1989 when it stabilized at 4 per cent (Szirmai and Lapperre 2001).

Nonetheless, the SAPs were marked with declining levels of capacity utilization in the public sector and increasing trend in the private sector, marking a shift towards private investments. For instance up until 1985 publicly-owned textile establishments performed better than the privately owned firms (Bagachwa et al. 1992). This could have been a result of the government's determination on using the economy's own resources to bring growth into the industrial sector while putting restrictions on private ownership elements.

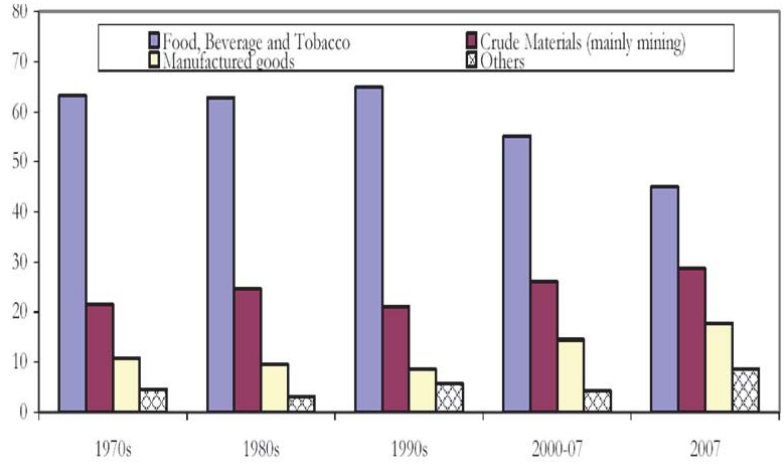
However, with the adoption of SAPs the situation was reversed. This is because following trade liberalization in the mid-1980s, government subsidies to the textile sector were removed; and import controls that gave some companies the monopoly to import mass-consumption goods under the arrangement of the Board of Internal Trade (BIT) were abolished. Consequently, there was a flood of textiles and garments from South East Asia and China, which were of better quality and more competitively priced than locally produced items.

In addition, second-hand clothes (*Mitumba*) that had previously been imported by charitable organizations for donation to the needy[6] were commercialized. By 2002, these accounted for 35.2 per cent of all textile imports in Tanzania (MITM 2004). Analysis of the value of importation and export of used clothes in comparison to other textile in Tanzania in 2004. According to Kabelwa and Kweka (2006), the lack of technical expertise and the shortage of working capital resulted in most government-owned mills operating as much as below 10 per cent of capacity. This trend continued until the late 1990s when most state-owned textile mills were shut down awaiting privatization. On balance, one could argue that SAPs, marked by macroeconomic reforms, privatization and trade liberalization, led to de-industrialization. Indeed, by the year 1990, 22 out of the country's 24 textile factories had closed. Figure 3 provides a more detailed picture of the decline in merchandise exports over the years.

In stark contrast to the dismal industrial development during the home-grown reform period, the liberalization phase was associated with the establishment of industries which increasingly produced finished goods. These findings point to the possibility that rehabilitation under the SAPs did address weaknesses in the competitiveness of public industrial enterprises. Although changes in the macroeconomic environment introduced competitive pressures among manufacturers (e.g., injecting concern for quality consideration), many of the earlier weaknesses in technological development and competitiveness had not been resolved by policy reform. This is a reflection of the persistence of weaknesses in the institutional mechanisms for the support of industry and in the incentive framework relating to the building of capacity to compete and to develop technological capabilities. The importance of action at this level is well demonstrated in the case of the textile sector (see Valk 1992). Similar action needs to be generalized and expanded to the whole industrial sector within the framework of an industrial strategy.

[6] To the desperately poor such as the aged, orphans, poor families, disabled, refugees and disaster victims.

Figure 3: Percentage of merchandise to total exports



Source: IMF (2009).

With the focus back on industrial progress as a development agenda from 1995 onwards, the manufacturing sector exhibited continued improvements with an annual growth rate of approximately 5 per cent in 2001, a 0.1 per cent increase to the level estimated two years before. Exports of food, beverages and tobacco increased between the 1970s and 1990s but started to fall in 2000s. Indeed, in 2009, export of manufactured goods declined due to the deceasing demand from neighbouring countries as a result of the 2008 global financial crisis. Nevertheless, the total value of the country's traditional exports was reportedly 22.4 per cent greater in 2011 than during the previous year as a result of a significant increase in both the volume of the exports as well as the price per unit of tobacco and cashew nuts (BOT 2011).

It is worth noting that the increasing levels in individual sectors' merchandise exports are partly due to the higher rates of capital growth over time. Capital is a crucial aspect for any economy to prosper as it facilitates effectiveness in production. Fifteen years of implementing SIDP have seen a steady boost in the economy's capital accumulation which, in turn, has facilitated improvements in the productivity of labour and output as Figure 4 shows.

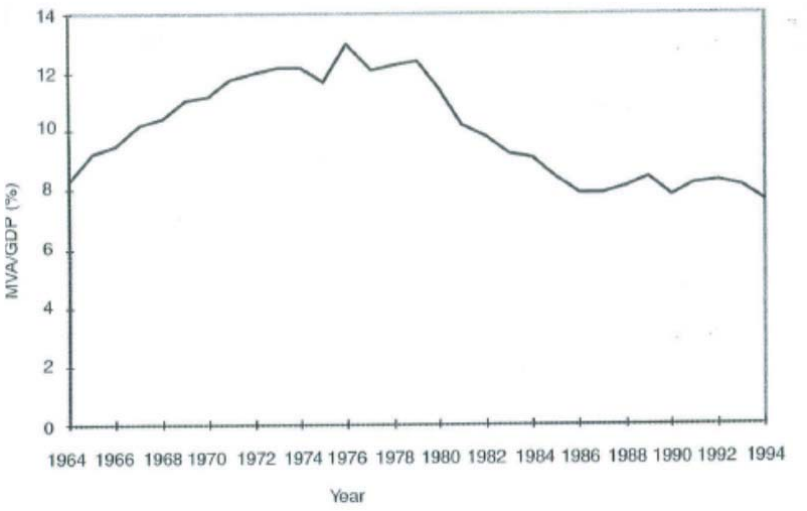
Figure 4: Fixed capital formation in Tanzania (percentage of GDP)

Source: World Bank (2012).

Over the years, performance trends in the manufacturing sector have produced mixed results. Indeed, the share of MVA continued to rise until the 1980s when it fell, but rose again in the

1990s. As Figure 5 shows, the GDP share of manufacturing value added increased from around 8.4 per cent in 1964 to 10.2 per cent in 1967, declining thereafter. This was also accompanied by an increase in comparative and general labour productivity between 1965 and 1967 (Szrimai and Lapperre 2001).

Figure 5: Share of manufacturing value added in GDP (as a percentage)



Source: NBS (1995a, 1995b, 1995c).

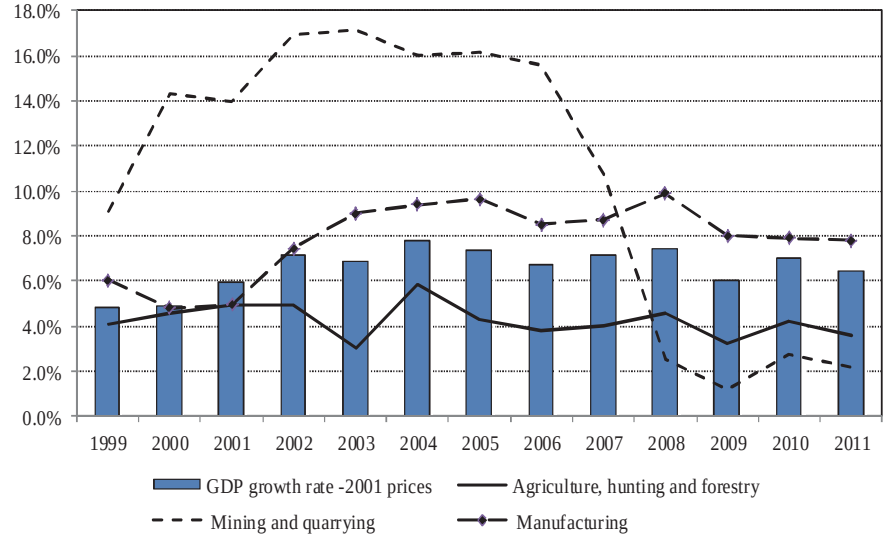
In a nutshell, Tanzania's ideological shifts in the latter half of the 1960s led to an adverse evaluation of both the TYP and FFYP over their failure to promote local ownership in the production processes. This led to criticism from the then ruling party stalwarts over the distributive effects of the two polices. Indeed, the failure to promote a product mix under the TYP and FFYP had hindered diversification and slowed down the broadening of the domestic industrial base. This, along with the low degree of direct regulatory control which defined the economy and the conflicting political ambitions of the ruling elite, prompted a revision of policy.

Ultimately, however, Tanzania had 729 large industrial establishments, the majority of which were manufacturing firms according to 2008 Annual Survey of Industry Production and Performance (URT 2010). Specifically, the general industrial structure of Tanzania includes: processing industries (43 per cent); manufacturing industries (53 per cent) and the remainder as assembling industries (4 per cent). Nonetheless, compared to its major trading partners, Tanzania has a small manufacturing sector that is heavily dependent on agriculture. Indeed, since agriculture is the mainstay of the economy, the manufacturing industry is centred around the processing of local agricultural goods (URT 2007, 2008). But in a competitive global economy, Tanzania is a market for the better performing countries. Tanzania's five major trading partners include China, South Africa, India, the United Arab Emirates and Japan. These are generally industrial nations, and trade relations with them involve the purchase of manufactured goods and oil by Tanzania, and the sale of its non-industrial traditional export products to them in return.

That said, output growth in manufacturing over the past few years has been increasing and is relatively higher than that recorded in the pre-reform periods of the 1990s (URT 2009). As noted earlier, the growth rate of manufacturing has been well above the overall 6.8 per cent average economic growth recorded in the past five years up until 2011. The pattern of manufacturing activity shows that between 1994 and 1999, the average growth rate of the sector was 4 per cent per annum, better than the 2 per cent average of the late 1980s and early 1990s (URT 2001).

During the 2000s, physical volume of manufacturing increased steadily at an average rate of 7.1 per cent between 2000 and 2004, and 8.6 per cent during the years 2005-11 (Figure 6).

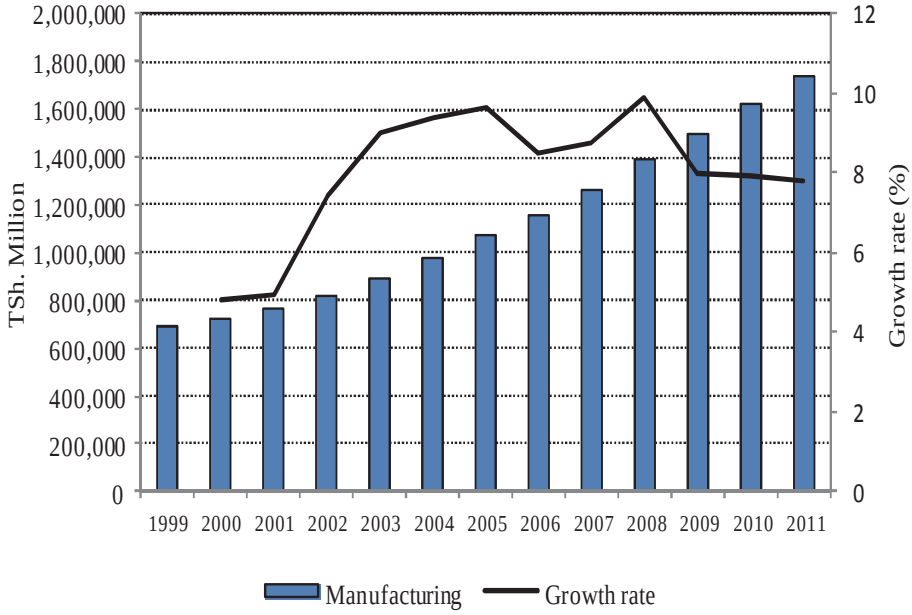
Figure 6: Growth rate of selected sectors



Source: URT 2012.

Figure 6 shows that manufacturing was one of the sectors driving growth in the 2000s, as its growth rate has exceeded the overall growth of the economy. Indeed, whereas the mining sector as growth engine has recently declined, the manufacturing sector since 2008 has remained relatively resilient to shocks especially during the recent global economic crisis, 2008-10.

Figure 7: Value of physical manufacturing output



Source: URT 2012.

Furthermore, production in the manufacturing sector consistently expanded in the 2000s except for the year 2006 when there was a notable slump owing to electricity rationing in the country. Improvement occurred thereafter, before second downturn in 2009, reflecting the global economic crisis (see Figure 7).

Of important note, however, is the fact that Tanzania's manufacturing sector is not widely diversified, which makes it vulnerable to variations in agricultural production and commodity prices. In fact, the most significant changes in the composition of the manufacturing industry in the past decade has been the decline in some industries such as spinning, weaving, clothing and textile subsectors, mirroring the subsectors' over-exposure to international competition, attributed partly to a relaxation in trade restrictions.

Table 1: Main products of Tanzania manufacturing industries

		Manufacturing firms, %	
	Main products by ISIC 3-digits	2000-04	2008
151	Production, processing and preservation of meat, fish, fruit, vegetable, oil and fats	11.4	10.59
152	Manufacturing of: Diary product	3.83	3.53
153	Grain mill products, starches/products and prepared animal feeds	9.21	9.92
154	Other food products	0.73	1.43
155	Beverages	6.11	7.74
160	Tobacco products	-	0.67
171	Spinning, weaving, and finishing textiles	5.38	4.21
172	Manufacture of: Other textiles	0.73	0.67
181	Manufacture Weaving apparel, export fur apparel	5.38	4.96
191	Tanning and dressing of leather; manufacture of luggage, saddles/harnesses	7.66	7.06
192	Manufacture of footwear	0.73	0.67
201	Sawmilling and planning of wood	0.73	0.67
202	Manufacture of: Products of wood, cork, straw and plaiting	1.55	0.67
210	Paper and paper products	4.56	5.63
221	Publishing	1.55	1.43
222	Printing and service activities related to printing	5.38	4.21
231	Manufacture of: Coke oven products	2.28	2.86
241	Basic chemicals	2.28	1.43
242	Other chemical products	5.38	7.06
251	Rubber products	0.73	0.67
252	Plastic products	3.83	5.63
261	Glass and glass products	0.73	-
269	Non-metallic mineral products	5.38	4.96
272	Basic iron and steel products	3.83	4.96
281	Structural metal products, tanks, reservoirs and steam generators	0.73	-
289	Other fabricated metal products; metal working service activities	1.55	0.67
311	Electric motors, generators and transformers	1.55	1.43
319	Other electrical equipment i.e.	2.28	2.10
343	Parts and accessory for motor vehicles and their engines	0.73	0.67
361	Furniture	1.55	0.67
369	Manufacturing, not elsewhere classified	2.28	2.77
	Total	100.0	100.0

Source: MITM (2009).

Note, however, that food, beverage, and tobacco products have proved to be resilient and exhibited less volatility over time. The impact of regional integration and increased globalization

seems to have made a positive contribution to manufacturing performance recently. Indeed, some of industrial products have improved their market competitiveness, and remarkable sales performance has been exhibited by beer, cigarettes, soft drinks and bottled mineral water. The increase in sales is mainly due to improved quality, efficient distribution systems, and rigorous promotion and advertisement. Table 1 shows the main manufacturing products in Tanzania as proportions of the total size of the sector.

3.2 Manufacturing value added record

According to the 2012 Industrial Competitive Report (ICR), the environment in which industrialization occurs keeps changing. Fast technological change, globalization of production systems and the emergence of new competitors create a completely new context for sustainable industrial development (URT 2012). This is a challenge for the countries that are yet to realize their industrial potential, where manufacturing contributes less than what could actually have been the case at full capacity. Although Tanzania is in this challenging group, the manufacturing sector has been evolving in recent years and so its MVA growth is currently higher than that of most of comparative nations (see Table 2).

Table 2: Manufacturing value added and export growth, Tanzania and its comparators (%)

	Manufacturing value added growth			Per capita	Manufacturing export growth		
	2000-05	2005-10	2000-10	2000-10	2000-05	2005-10	2000-10
China	10.4	12.1	11.2	11.0	26.0	16.0	21.0
Mozambique	14.7	2.6	8.4	6.0	28	–4.0	11.0
Tanzania	8.1	8.6	8.3	5.0	18.0	45.0	31.0
Uganda	6.1	7.1	6.6	3.0	32.0	27.0	30.0
Zambia	5.0	5.5	5.3	3.0	11.0	22.0	16.0
Indonesia	5.0	3.9	4.4	3.0	5.0	11.0	8.0
Botswana	3.6	4.7	4.1	3.0	10.0	1.0	5.0
Kenya	3.1	4.3	3.7	1.0	28.0	5.0	16.0
Malaysia	4.6	2.3	3.5	1.0	7.0	7.0	7.0
Malawi	–5.5	12.2	3	0.0	13.0	19.0	16.0
South Africa	3.1	1.6	2.3	1.0	12.0	9.0	10.0
Mauritius	0.6	2.7	1.0	0.0	–1.0	1.0	0.0

Source: World Bank (2012).

As shown in Table 2, Tanzania's MVA has grown significantly in the past decade. ICR indicates that between 2000 and 2010, MVA increased by 12.3 per cent from US$894 million to US$1,992 million in constant terms. What is remarkable is the stability of the country's growth of manufacturing exports which was on average 31 per cent during the period 2000-10, and it was the highest of all comparative countries. It is generally acknowledged that MVA growth is complemented by impressive economic growth, as exemplified by China, Mozambique, Uganda and Tanzania which exhibit the highest GDP growth rates for the period 2000-10 (10.5 per cent, 7.8, 7.4, and 7.0 per cent, respectively), and their performances were accordingly linked with high growth rates of MVA.

Nevertheless, there is some lingering doubt whether Tanzania can sustain this impressive MVA growth trend, especially if it continues to focus on natural resource-based activities, notably metal and extractive industries whose value added growth is limited. It has been suggested that one of the strategic options for the country is to move to higher value added activities. The structural change necessary for improving the country's economic development has to be based on its comparative and competitive advantages. Increasing value addition through enhanced

processing of agricultural products and natural resources can be a possible starting point for Tanzania's structural transformation.

Nevertheless, it is imperative to note that Tanzania's MVA performance in relative terms, i.e., taking the country's size into account, is still low. In 2010 MVA per capita was US$44 and its growth rate was 5 per cent, lower than that of China (11 per cent) or Mozambique (6 per cent) (see Table 2). Tanzania's MVA growth has, however, overtaken and reduced the gap between Tanzanian and other neighbouring countries like Zambia and Kenya in per capita terms. This outcome is impressive, but only when compared with other East African countries which generally lag far behind their global trading partners.

3.3 Sales and inventory of manufacturing firms

The increase in sales is a good sign for the profitability of firms. The Ministry of Industry, Trade and Marketing (2009) survey data of 119 manufacturing firms is used to describe annual output sales for the period 2004-08 (see Table 3). Different sizes of firms are presented to indicate the dynamics occurring over time. In 2004, 46.2 per cent of sales in manufacturing were from firms that were making less than TZS 50 million per annum and only 7.7 per cent of sales came from firms whose sales exceeded TZS 5 billion. Conversely, by 2008 sales of firms earning less than TZS 50 million decreased to 22.1 per cent while the sales share of firms earning more than TZS 5 billion had increased to 18.4 per cent. These developments are a good indication of the country's expanding manufacturing sector. Accordingly, inventories decreased substantially across all firms, and more so for the larger firms, which implies that the sector was producing and selling more. The accumulation of inventory is indicative of either uncertainty (i.e., hedging) or insufficient markets for the goods, thus necessitating storage. A firm exhibiting high sales and low inventories, therefore, implies the opposite of these difficulties.

Sales in general have increased over time because the new emerging firms in the manufacturing sector are mainly driven by the gradual and consistent growth of small firms to sizeable producers. Technological improvements have enabled these firms to penetrate wider markets. These firms form the basis of our discussion in the next section as we seek to understand the features that make them successful.

Table 3: Annual output sales and inventories of manufacturing firms

	TZS	2004	2005	2006	2007	2008
Sales	< 50 million	46.2	44.9	39.7	33.1	22.1
	50 – 500 million	7.7	9.0	6.6	11.0	11.1
	500 million to 1 billion	7.7	9.0	6.6	11.0	3.7
	1 billion to 5 billion	30.8	28.1	33.9	22.1	18.4
	> 5 billion	7.7	9.0	13.2	22.8	44.7
Inventories	< 50 million	36.4	30.0	16.7	12.5	22.7
	50 – 500 million	45.5	50.0	8.3	50.0	31.8
	500 m to 1 billion	-	-	50.0	6.3	9.1
	1 billion to 5 billion	18.2	20.0	-	31.3	27.3
	> 5 billion	-	-	25.0		9.1

Source: MITM (2009).

4 Key characteristics of field data and identification of emerging manufacturing subsectors and firms

A total of 84 emerging manufacturing firms located in eight regions of Tanzania mainland were selected for interviews. The main subsectors covered are given in Table 4. Response rate of firms was 58.3 per cent. Selection of the sample was proportionate with the extent to which the respective subsectors contributed to manufacturing production and export. The more the subsector has expanded, the larger the number of firms that were selected from the respective category. The leading sectors in terms of diversity and activity in recent years are food processing, plastic and rubber industries. For proportional representation, these subsectors are the ones with the largest elements in the sample.

Responses were given mostly by the managers and the owners of firms. About 53 per cent of the questionnaires were filed by managers while owners responded to around 16 per cent. The regional coverage of the sample is shown in Table 5. The largest number of firms was selected from Dar es Salaam which has the highest industrial density.

Table 4: Industry category/subsector

	Subsectors	Density	%
1	Food	12	24.5
2	Textiles	5	10.2
3	Chemicals	5	10.2
4	Plastic and rubber	9	18.4
5	Non-metallic mineral products	2	4.1
6	Basic metals	3	6.1
7	Fabricate metal products	1	2.0
8	Machinery and equipment	1	2.0
9	Electronics	2	4.1
10	Other manufacturing	9	18.4
	Total	49	100.0

Source: Computed by authors based on data from the survey.

Table 5: Geographical location coverage by regions

	Regions	Density	%
1	Dar es Salaam	29	59.2
2	Tanga	7	14.3
3	Kilimanjaro	2	4.1
4	Arusha	2	4.1
5	Morogoro	5	10.2
6	Iringa	1	2.0
7	Mwanza	2	4.1
8	Mara	1	2.0
	Total	49	100.0

Source: Computed by authors based on data from the survey.

Table 6: Legal status by ownership

	Density	%
Publicly listed company	4	8.2
Private held, limited company	37	75.5
Cooperative	1	2.0
Partnership	4	8.2
Other	2	4.1
Total	48	98.0
Missing system	1	2.0
Grand total	49	100.0

Source: Computed by authors based on data from the survey.

Table 6 gives the distribution of the interviewed firms based on their legal status with regard to ownership. Over 75 per cent of the firms were privately owned limited liability companies and 8.2 per cent were listed on the Dar es Salaam Stock Exchange (DSE). Sole proprietorship status constituted only 8.2 per cent of all interviewed firms. This indicates that the studied companies are formal manufacturing firms. With respect to formality, all the companies indicated that they followed formal accounting procedures in accordance with government guidelines and their accounts were audited.

4.1 Identified emerging manufacturing subsectors and firms

In almost every subsector of the manufacturing industry some firms are performing better than others and are thus growing with relatively faster rates than others. Nevertheless, based on available statistics, the most dynamic subsectors in terms of output growth, production innovation, exports expansion, employment and diversity of products were those engaged in:

i) food processing;
ii) plastic and rubber production;
iii) textiles;
iv) chemicals;
v) basic metal work;
vi) non-metallic mineral products;
vii) fabricated metal products and
viii) machinery and equipment production.

This section identifies the emerging subsectors where firm performance is outstanding, based both on field survey data and the secondary manufacturing survey statistics. Table 7 gives the surveyed subsectors, including their location and names of the firms.

A few of these firms are relatively old, as they had started operations prior to the country's independence. But the majority of the surveyed firms are relatively new in the sense that they have been in existence less than 50 years. We also identified a few firms that have existed for less than 10 years but which qualify as emerging firms due to their excellent performance.

Specifically, these firms were identified on the basis of their exemplary entry into the market either by producing and introducing new products; and/or deeply penetrating the market especially in the international trade (export growth). Other important attributes included the firm's ability to acquire new technologies and contribute to employment. Also, resilience in

production and sales (or business profitability) were also considered. The selected manufacturers, on average, had been able to revert back at least to their former productivity levels shortly after the recent global economic crisis. Note also that although not all of the selected manufacturers are export-oriented, a good number of them have generated increases in exports, particularly in the recent past. In fact, some of these firms are currently considered as leading players in exports as Table 8 depicts.

Table 7: Interviewed firms: their industry/subsector and location

Year established	Industry / subsector	Location	Name
	Other manufacturing	Morogoro	SAS Gas Limited
1947	Basic metals	Dar es Salaam	Nampak Tanzania Ltd.
1952	Chemicals	Dar es Salaam	Tol Gases Ltd.
1957	Chemicals	Dar es Salaam	Shelys Pharmaceuticals Ltd.
1960	Food	Morogoro	Kilombero Sugar Co Ltd.
	Fabricate metal products	Dar es Salaam	Alaf Ltd.
1961	Food	Tanga	Anjari Soda Factory Ltd.
	Other manufacturing	Dar es Salaam	Tanzania Cigatare Co Ltd.
1962	Chemicals	Dar es Salaam	Mansoor Daya Chemicals Ltd.
	Plastic and rubber	Dar es Salaam	Unoplast Tanzania Ltd.
	Other manufacturing	Kilimanjaro	Kibo Match Group Ltd.
1963	Food	Morogoro	Mtibwa Sugar Estates Ltd.
	Plastic and rubber	Dar es Salaam	Silafrica Tanzania Ltd.
1966	Food	Dar es Salaam	Darbrew Ltd.
		Mwanza	Vegetable Oil Industries Ltd.
1967	Electronics	Dar es Salaam	Sanitary Appliances and Hardware Ltd.
1968	Plastic and rubber	Dar es Salaam	Pan Africa Enterprise Ltd.
			Tanzania Brush Products Ltd.
1970	Other manufacturing	Dar es Salaam	Tanzania Distilleries Ltd.
1977	Basic metals	Dar es Salaam	East Africa Cables Ltd.
1980	Textiles	Mara	Musoma Textile Mills(t) Ltd.
	Other manufacturing	Tanga	Tanga Cement Company Ltd.
1981	Machinery and equipment	Arusha	Tanalec Ltd.
1988	Food	Dar es Salaam	Interchick Co. Ltd.
1991	Electronics	Morogoro	Morogoro Wire Rolling Ltd.
1992	Food	Dar es Salaam	Murzah Oil Mills Ltd.
	Other manufacturing	Dar es Salaam	Raffia Bags(t) Ltd.
1993	Food	Dar es Salaam	Powerfood Industries
	Plastic and rubber	Dar es Salaam	Plasco Ltd.
		Morogoro	Morogoro Plastics Ltd.
1994	Basic metals	Dar es Salaam	M. M. Integrated Steel Mills Ltd.
1995	Textiles	Kilimanjaro	Kilimanjaro Coffee Dealers (1995) Ltd.
1997	Food	Dar es Salaam	Coca-Cola Kwanza Ltd.
		Tanga	Tanga Fresh Ltd.
	Chemicals	Tanga	Tanga Pharmaceutical and Plastics Ltd.
	Non-metallic mineral products	Dar es Salaam	Sign Industries Ltd.
1998	Textiles	Tanga	Katani Ltd.
1999	Other manufacturing	Dar es Salaam	O.I.T.(T) Co Ltd.
2000	Food	Iringa	Assas Dairies Ltd.
	Textiles	Tanga	Amboni Plantation Ltd.
	Chemicals	Dar es Salaam	Chemi7 Cotex Industries Ltd.
	Plastic and rubber	Dar es Salaam	Vita Foam(t) Ltd.
2001	Plastic and rubber	Dar es Salaam	DPI Simba Ltd.
	Other manufacturing	Arusha	Minjingu Mines and Fertilizers Ltd.
2004	Textiles	Dar es Salaam	21st Century Textile Ltd.

	Other manufacturing	Dar es Salaam	Songas Ltd.
2007	Plastic and rubber	Mwanza	VIctoria Moulders Ltd.
	Non-metallic mineral products	Tanga	Ando Roofing Products Ltd.
2008	Food	Dar es Salaam	Afri Tea and Coffee Blenders (1963) Ltd.

Source: MITM (2009).

Table 8: Leading players in exports

Category	Product description	Company
Iron and steel	Corrugated iron sheets	ALAF Ltd.
	Bars and rods hot rolled	Sayona Steel Ltd.; Nyakato Steel Mills Ltd.
	Galvanized pipes	ALAF Ltd.
	Steel pipes	Tanzania Steel Pipes Limited
	Metal containers	Nampack Tanzania Ltd.
Electrical products	Electrical transformers	Tannalec Company
	Electric cables	East Africa Cables Ltd.; Multi Cable Ltd.
	Dry cells	Panasonic Energy
Auto parts	Radiators	Automech/Afrocooling
Non-metallic	Portland cement	Tanzania Portland Cement Company Ltd. (TPCCL); Tanga Cement Company Ltd.
	Lime	Neelnkath Factory; Athi River Company,
	Glass containers	KIOO Ltd.
Chemical products	Phosphate fertilizer	Minjingu Rock Phosphate Co. Ltd.
	Paints	Insignia company Ltd.
	Plastics and rubber products	Cello Industries Tanzania Ltd.; Jambo Plastics Ltd.
	Safety matches	Alfa Match Industries Ltd.
	Soap and detergents	Murzah Soap and Detergents Ltd.
Tobacco products	Tobacco, cured	Tanzania Tobacco Processors; Songea Tobacco Processing Factory
	Cigarettes	Tanzania Cigarette Company Ltd.
Pulp and paper	Kraft liner and sack kraft paper	Mufindi Paper Mill
Insecticides and pesticides	Pyrethrum extracts	Tanzania Pyrethrum Processing and Marketing Company
Leather/leather products	Wetblue	Moshi Leather Industries Ltd.; East-Hides Morogoro
Textile products	Canvas	Morogoro Canvas Mill (1998) Ltd.
	Woven fabrics	NIDA Textile Mills; Sunflag(T) Limited
	Knitted fabrics	Sunflag(T) Limited; A to Z Textile Mills; Mazava
	Khanga, kikoi and kitenge	NIDA Textile Mills; 21st Century-Morogoro
Sisal products	Sisal ropes and twine	Amboni Spinning Mill Ltd.; Tancord (1998) Ltd.
	Jute bags	TPM (1998) Ltd.
Pharmaceuticals	Capsules	Shely's Pharmaceuticals Ltd.; Zenufa Pharmaceuticals
	Tablets	Shely's Pharmaceuticals Ltd.; Zenufa Pharmaceuticals
Milk and milk products	Standardized milk	
	Yogurt	
	Butter and cheese	
Fruits and vegetables	Canned fruits	Dabaga Vegetable and Fruits Canning Co Ltd.**
	Juices	
Edible oils	Palm oils and its fractions	Murzah Oil Mill Co. Ltd.; East Coast Oil Mill Co.Ltd.
	Sunflower cotton seed oils	Mount Meru Milers Ltd.
Grain mills	Maize flour	Said Salim Bakhresa and Co.Ltd.
	Wheat flour	Said Salim Bakhresa and Co.Ltd.; Mikoani Traders Ltd.
Tea products	Black tea	Uniliver Tea Tanzania; Tanzania Tea Packers Ltd. (TATEPA)
	Blended tea	Afri Tea and Coffee Blenders (1963) Ltd.

	Instant coffee	TANICA
Beverage	Bottled beer	Tanzania Breweries Ltd. (TBL); Serengeti Breweries (T) Ltd. (SBL)
	Spirits	Tanzania Distilleries Ltd.,
Fish	Fish products	Vic Fish Ltd.; Nile Perch Fisheries Ltd.

Source: MITM (2009).

4.2 Main characteristics of identified emerging subsectors and firms

Organization

According to the survey, more than 80 per cent of the firms have multiple ownership. The dilution of ownership indicates that large-scale production and growth are related to the availability of capital, which is in tandem with the theory of diversity of ownership and resources pooling. This setting has the advantage of economies of scale owing to capital accessibility and separation between ownership and management, because owners in multiple ownerships normally hire competent management and establish boards to control the firm on behalf of the shareholders. Individual interests are suppressed in these types of businesses, and boards operate in ways that can raise the firm's market value.

Output value

Emerging manufacturing firms are characterized by a high rate of growth in output (see Table 9). Between 2010 and 2012, the output value of the surveyed firms grew substantially by an overall average of 48.8 per cent. Sector-wise, food processing, machinery and equipment, textile and basic metal works were the leaders in terms of significant growth in output value, which rose in all of these by more than 40 per cent per annum. Increases of this nature are admirable, although the challenge is maintaining this growth, since it can sometimes develop into a bubble, i.e., occurring in an unsustainable manner.

Table 9: Change in the value of output, 2011-12

	%
Food	111.9
Textiles	48.4
Chemicals	25.6
Plastic and rubber .	39.3
Basic metals	47.4
Fabricate metal products	32.4
Machinery and equipment	68.9
Other manufacturing	16.4

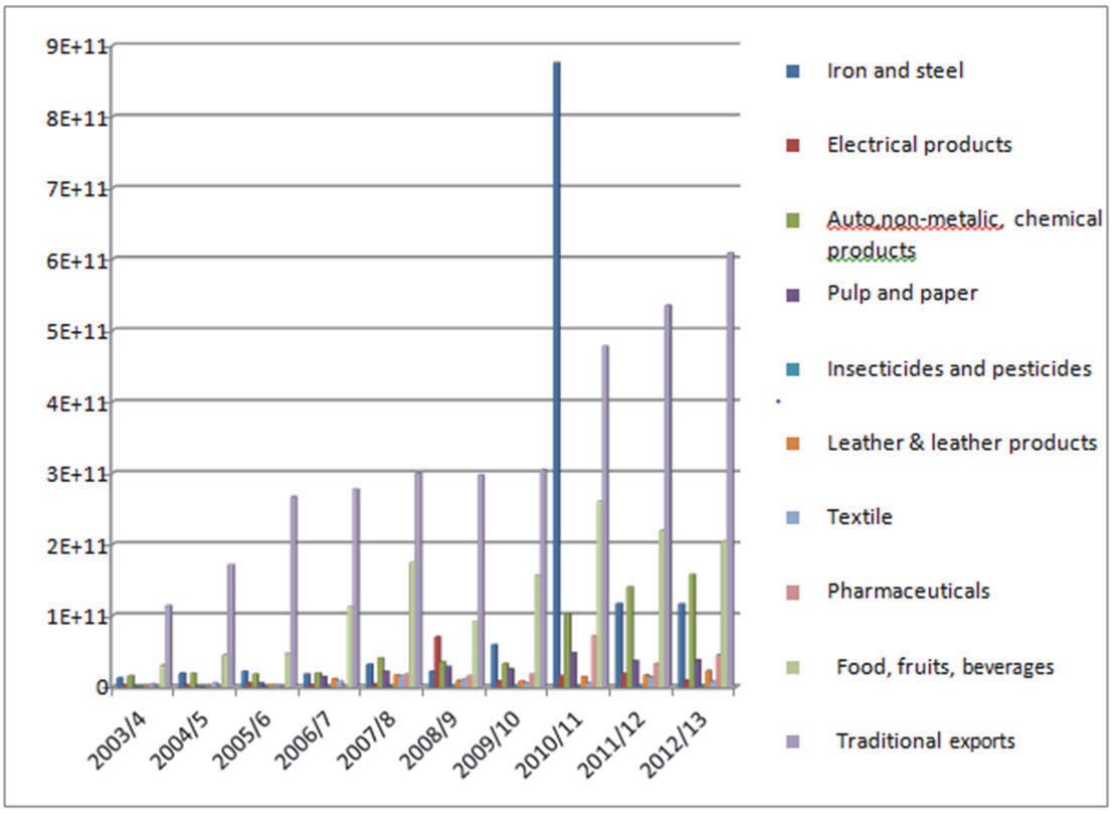
Source: Computed by authors based on data from the survey.

Exports value

The recent development trend of exports has been mixed. As Table 8 shows, about a third of the selected emerging manufacturing firms were active in exports. The export values of these firms dropped considerably (around 45 per cent) from 2008 to 2009. This is attributed, first, to the global economic crisis, and second to the generally rising production costs from the high world fuel prices which translate into soaring transportation cost. Nonetheless, improvements were recorded between 2010 and 2011, and export values of the same firms rose by 23 per cent with

the recovery of the global economy (see Figure 8 below). A quick look shows that emerging manufacturing firms in Tanzania are resilient to shocks, as is evidenced by their quick catch-up once the world economy recovered from recession. It is important to recognize that, on average, a fourth of the total output produced by the emerging manufacturing firms included in the sample is destined for export. During recent years, there were a few firms, notably Amboni Plantation Ltd., Raffia Bags (T) Ltd., TANALEC Ltd., and Tanga Pharmaceutical and Plastic Ltd., with export values exceeding 55 per cent of their output value. In view of this, some of the emerging manufacturing firms in Tanzania are very much outward-looking and have succeeded well in penetrating foreign markets.

Figure 8: Trends of volume of exports (values in TZS)



Source: based on data by Ministry of Industry and Trade (2013).

Employment status

Following the global economic slowdown, employment in the sampled enterprises decreased by almost 9 per cent between 2010 and 2011. There was movement to an opposite direction between output/export values (which increased) and employment (which fell). The difference between these variables is theoretically caused by two main factors: (i) increased productivity and/or (ii) inflation rate which tends to elevate nominal values. Annual average inflation was around 12 per cent in 2011 and total output value increased by 30 per cent. Because the Tanzanian shilling was also depreciating, we removed the export component from the total output value and then analysed the increment in the domestic value of output which was around 12 per cent, similar to the inflation annual average, telling us that the rise in output value was most probably a nominal phenomenon (i.e., due to price increases). Nevertheless, if employment went down and output in real terms remained the same, we still can conclude that there was

some productivity improvement, naively because the workforce decreased and the remaining employees managed to maintain output levels.

Technology and innovation

The survey conducted an enquiry on the technology of the emerging manufacturing firms with a view to understanding the technology level, efficiency in the use of available technology, status of equipment and sources of supplies of manufacturing machinery. Most of the firms perceived their technology level to be superior to that of their main competitors (see Table 10). More than a half of the interviewed manufacturing enterprises believed that they have technology superior to that of their competitors, and a reasonable number of the remaining enterprises perceived their technology to match that of their main competitors. Only a few firms considered themselves to be below the technological level of their competitors.

Table 10: Technological capacity of firms against their main competitors

Level of technology compared to main competitor	Frequency	%
Below the level of the main competitors	2	4.2
At the level of the main competitors	20	41.6
Above the level of the main competitors	26	54.2

Source: Computed by authors based on data from the survey.

About eight of the interviewed firms argued that they could not increase output with their present level of technology; in other words, machinery capacity was fully utilized (see Table 11). The rest of the firms felt they had ample room for expansion, and this implies that there is sizeable capacity that has not been utilized in the manufacturing sector in Tanzania.

Table 11: Extent to which production can be increased with present equipment/machinery

Possibility by proportions (%)	Frequency of firms
Full capacity	6
Up to 10	0
10 – 25	9
26 – 50	10
50 – 100	15
Above 100	6

Source: Computed by authors based on data from the survey.

It is encouraging to note that a number of firms are investing in the purchase of machinery. Most of the surveyed manufacturers owned their machines and equipment. Only 6 per cent preferred to rent instead of purchasing; these seem to be the firms using expensive technology and this approach allowed them to apportion costs across several production periods, consistent with the cost theory.

With regard to the source of machinery and equipment, 61 per cent of the firms indicated that they obtained the necessary machinery/equipment from foreign suppliers; the rest purchased from the domestic private sector. Private commercial sources supply around 28 per cent and non-commercial sources the remaining 11 per cent. The majority of the manufacturing firms have adopted new technology in the past few years, largely imported from abroad.

Half of the surveyed firms advised that they undertake in-house research and had development (RandD) activities and that they hold internationally recognized patents; a third had introduced

new product groups in the past two years. Thus it would seem that the emerging firms have invested in sophisticated technology, having a very positive impact on growth and the development of the manufacturing sector.

Clientele base

The largest firms in the survey had a clientele base, both domestically and outside the country, of more than a hundred customers. Note also that these are wholesale customers. At least half of the firms have internationally recognized quality certificates for their main products. With regard to domestic sales, of the surveyed firms about 40 per cent accounted for more than half of the market share, and the remainder contributed no less than 10 per cent (with one exception). This indicates that these firms are domestically competitive or rather that vertical linkages do exist. The most important customers of the identified manufacturing firms are located in the large towns and abroad.

Material supplies

Material inputs for the emerging manufacturing firms (and particularly the intermediate goods) are largely imported. On average, almost 70 per cent of inputs are imported and a third of the interviewed firms generally rely on 100 per cent importation of their input. This has negative implications on forward linkages for primary goods producers whose material consumption (by industries) is low. Without processing industries to utilize substantial amounts of primary inputs, the impact can be considerable, especially to agricultural producers, as the competitiveness of these raw products is limited on the world markets.

5 Success elements of emerging manufacturing firms

Success of the emerging manufacturing firms is a function of several factors, both firm-related as well as due to external conditions. As suggested earlier, success of the new entrants hinges on the economic reforms, particularly privatization and liberalization, in the industrial sector. These have been instrumental in providing the private sector with opportunities for growth. After conducive institutional and legal frameworks were put in place for strengthening private sector investment in manufacturing, potential investors have made considerable progress in raising industrial performance. Survey data highlight the key elements of success across firms such as quality products; good management; marketing strategies; technology; investment in human capital and innovation; experience, reputation and good relationship; customer services and networking. Other elements frequently mentioned include access to financing opportunities; timely delivery and attractive credit policy; staff motivation; and availability of raw materials.

5.1 Quality products

Quality is an important element of industrial success because high-standard products are better able to penetrate the global markets and capture a substantial share. Products like tea and coffee blends, textiles, beverages and food processing industries face stiff competition but their good quality has successfully secured a reasonable niche of the market. Some manufacturing firms are doing well but many others have been unable to compete because of inferior quality products: the assurance of quality is the secret of success for many firms, but also the source of failure for those that have not standardized their products. Globalization has meant that consumers have the option of selecting better and more competitive products from elsewhere.

5.2 Management capacity

Management ability and commitment to the achievement of the firms' goals have been instrumental in the success of most of the studied enterprises. Both owners and hired managers cited 'quality management' as important, because this increases the value of the firm, which, in principle, is the aim of any for-profit organization. In addition, management has a key position in nurturing the culture of the firm. Firms managed by competent professionals are usually motivated to generate a corporate culture aimed at success. Some enterprises included management succession plans in their corporate agendas to maintain good future leadership. The availability of investment resources is one vital aspect of a lucrative business, but successfully guiding the conversion of those resources into material commodities is another. In advanced countries, owners enter into joint ventures with business-savvy entrepreneurs who can help plan and organize management and production processes. In Tanzania, as in other developing countries, there is a paucity of skilled management that could transform the abundant available resources into wealth for the benefit of the society. Some of the high-potential firms have been denied the opportunity to take advantage of these possibilities by management inefficiency.

5.3 Strategic marketing

Marketing strategies have been important to a number of Tanzania's manufacturing industries. The survey showed that some industries lacked internationally recognized quality certificates, making it difficult to adapt productive, widespread international marketing strategies. Marketing is related to advertising, participation in trade fairs, promotions and packaging styles, and while some manufacturers have benefited from good marketing practices, others have lagged behind. Over 90 per cent of the interviewed manufacturers indicated that they have adapted major sales and marketing strategies in the last three years. Marketing also generates value addition to businesses since it widens the clientele base. Thus, strategic marketing, i.e., that is based on the intrinsic value of the commodity, would seem to be the most appropriate approach in the current world situation where information circulates quickly across nations.

5.4 Role of technology

Competitive science and technology are essential for the growth of the industrial sector in the current global economic setting. Almost all emerging, competitive, manufacturing firms upgraded their technology on a regular basis. They had state-of-the-art technology which they considered to be at least equal to that of their main competitors. Technological innovations enable to expand production possibilities while maintaining the same input levels. Emerging manufacturing firms have, therefore, benefited from technology investments and this is one factor of their outstanding success. Typical of a firm investing in technology is the acquisition of modern tools (machines and equipment) and outlays in research and development activities, as the example of Tanzania's emerging manufacturing firms shows. There is an indication that manufacturers in general have room for expanding output with existing capacity if technology is improved.

5.5 Investment in human capital and innovation

Human resources are a crucial factor for progress in the manufacturing industries, and the emerging firms have given reasonable weight to the development of their workforce. Human resources go in tandem with incentives and motivation of workers. Well-motivated employees are innovative and more efficient in their responsibilities, which, in turn, increases productivity and growth. Emerging manufacturing enterprises have given priority to human resources

development and motivation; and this has translated into tangible results in terms of growth and development.

Many manufacturing firms considered their success to have hinged on experience. These firms had been able to retain their workers, and thus avoid depleting the stock of human capital that occurs with a high rate of staff turnover. Thus among the factors that enabled the rising manufacturing firms to progressively sustain production was the accumulation of human capital. This is an important asset to organizations. Linked to human capital development and worker motivation is the innovative approach to production. When human resources are well managed, worker creativity arises, especially from the desire to produce better results and satisfy the employer. A conflict of interest between employers/shareholders and managers/employees, known as the *agency dilemma*[7] in the theory of the firms, is mitigated with good work relationships and incentives. This is evident in the emerging manufacturing firms in Tanzania.

5.6 Experience, reputation and good relationship

Experience matters for success, although it has to be complemented with some other underlying factors, such as incentives and the retention of key employees to preserve the firm's long-term skill- and knowledge-base. Emerging manufacturing firms considered the preservation of their expertise as one of the reasons they have been able to achieve good market outcomes.

Trust and reputation were also prioritized among the firms that have managed a breakthrough. An accumulation of goodwill and trust among the manufacturing industry will open large sections of the market and provide access to ample supplies of intermediate goods or raw materials. This can entail reductions in costs and new market opportunities amid stiff competition. Some manufacturers mentioned that reputation and good relationships were the foundation of the immense strength of their brand; that part of their success was due to the trust in their products by the market. However, it needs to be mentioned that while this was true for some firms, not all firms had been able to accumulate such goodwill. There is a notable difference between those with a reputation and those without.

5.7 Customer service and networking

Customer service is a key element of the functions of any business undertaking. As similar commodities are produced the world over by numerous companies, penetrating the market means that the firm in question has to be able to convince potential customers to purchase its products. Networking in the context of establishing market links is necessary for disseminating information on product availability, quality and prices. All emerging manufacturing firms in the survey considered satisfactory customer service and global networking to have contributed in part to their success. Good customer service emanates client confidence and makes firm-client relationships easy. Therefore good customer service is a factor that can increase the clientele base and is crucial for raising the value of the firm. The context of customer service is closely linked with that of marketing since customer service portrays the firm to outsiders, i.e., how an industry treats its customers will either enhance its growth (if it is well done) or retard it (if unsatisfactory).

[7] Principal-agent problem or agency-dilemma concerns the difficulties in motivating one party (the agent), to act on behalf of another (the principal). Common examples of this relationship include corporate management (agent) and shareholders (principal).

5.8 Financing opportunities

Liberalization of the financial sector is pertinent to availability of credit for private enterprises. A number of the emerging manufacturing firms confirmed that the availability of credit opportunities was among the reasons they were able to raise production and sales. The capital market in Tanzania is still small in terms of the number of listed firms and market capitalization, and the majority of businesses are not financed through equity shares to the public. Most firms depend on credit finance, particularly from banks. The problem with credit financing is that the opportunities to accessing long-term funding are limited. In addition, there are certain stipulations, which limit the decisions of the firms and impose excess controls on its management. The proportion of credit within the firm's capital should be an internal company decision but when the capital market is underdeveloped, financing choices are limited and most firms rely on credit financing from different sources.

Some manufacturing enterprises had difficulties in accessing credit because of the high lending interest rates. Furthermore, Tanzania has no credit information bureau, thus there are no credit records that could facilitate some of the manufacturers into becoming prime borrowers of the banks so as to benefit from low credit costs. High information asymmetry[8] is a considerable disadvantage because it takes a long time to nurture a close relationship between borrower and lender that could generate opportunities to secure adequate, affordable financial resources.

5.9 Timely delivery and attractive credit policy

The assurance of timely delivery is an incentive to customers. If orders are delayed, suppliers (particularly the wholesalers) will shift their alliances to those whose product availability is assured. Moreover, wholesalers may also be cash-constrained in purchasing their stocks from manufacturers, and certain firms have instigated a credit policy to facilitate the sale of their commodities. A credit policy attractive to buyers will ensure the manufacturers a share of the market for their commodities.

The sunrise, or emerging, manufacturing firms in Tanzania indicated that their success was partly attributable to delivery and credit policies. But timely delivery and sales-credit issues also depend on factors like adequate production capacity to meet the demands of the acquired market share and to maintain extra inventory for delivery in case of unforeseen contingencies like factory breakdown. Maintaining surplus inventory translates into extra costs, the option of credit means added expenditures from credit management and risk of default. This suggests that the industries that have managed to accomplish effective delivery and credit strategies are productively sound, and able to shoulder the additional costs.

5.10 Availability of raw materials

Statistics show that over 60 per cent of manufacturers imported their entire stock of raw materials while the remaining 40 per cent acquired a part of the necessary input from domestic markets. In either case, firms believed that the assured availability of material inputs had contributed, at least partially, to their success. The steady supply of materials, whether imported or produced within the economy, is vital to manufacturing performance. This underscores the fact that setting up firms which can take advantage of raw materials abundantly available is likely

[8] Information asymmetry is a situation in which one party in a transaction has more or superior information compared to another. In a credit market this often happens in transactions where the borrower knows more than the lender about riskiness of the loan and can potentially take advantage of the other party's lack of knowledge to assume extra risks using the credit money.

to boost domestic industrial production. In Tanzania there is a large base of food processing industries and the major contributing factor that led to their establishment was the accessibility of material inputs. But it is not essential for a country to have a wide material inputs-base to establish the relevant industrial firms. Japan and the Netherlands, among others, have managed without the benefit of a vast domestic inputs base, but this disadvantage must, first of all, be compensated by technology and/or location effect.

Tanzania is endowed with a variety of natural resources that are potential material inputs for different industries which could be established in the country. But the challenge is, first, to build domestic investment capacity so that Tanzanians are able to set up firms in resource-rich areas; and second, to create an attractive environment for more FDI in manufacturing. The country has knowingly prioritized agriculture, the country's largest employer and source of well-being, but to complete the contribution circuit from agriculture to development and growth, agro-processing industries must also be placed at the top of the nation's development agenda. In other words, prioritization of agriculture has to go in tandem with the processing industries and product marketing both domestically and abroad.

6 Sustainability of emerging manufacturing firms

The sustainability of the manufacturing industries becomes vital if the country has aspirations to develop into an industrial nation. It has been argued that for sustainability purposes, the manufacturing value chain[9] should be well defined, especially with regard to production linkages across industries; from the supply of raw materials to intermediate inputs and final goods. It is an advantage when downstream industries are linked with upstream industries, as this interdependence reduces costs and provides the forward and backward linkages within the economy. In well-linked industrial settings, input supplies originate from domestic firms, which means that the market for the supplying counterparts is within a reasonable proximity, thus reducing costs.

Manufacturing firms in Tanzania seem to be disadvantaged with regard to the value chain, as materials and intermediate inputs are largely imported. A well-organized structure that creates strong value chain fosters industry sustainability. But many other factors have to be in balance if the manufacturing sector is to become sustainable. First, the policy environment should be conducive for industrial performance. Sustainability of the manufacturing sector necessitates a stable macroeconomic environment, and the sector is ultimately underpinned by the stance of the country's macroeconomic policies.

For the individual manufacturing firm to become sustainable, it must, among other factors, strive to develop a competitive edge in the market and to continually strive to adopt new technologies. While the government is responsible for policy reforms, manufacturing firms themselves should master the specific industrial-related factors in order to achieve sustainable growth.

6.1 Value chain and sustainability of manufacturing firms

To examine the current status of the value chain in Tanzania's manufacturing sector, we look at the types of linkages in the production process. A review of the registered manufacturing

[9] A manufacturing industry value chain is a physical representation of the various processes that are involved in producing goods, starting with raw materials and ending with the delivered product (also known as the supply chain). It is based on the notion of value added at the link level. The sum total of link-level values added yields total value.

industries by type indicates that a link does exist between firms producing different commodities. Field information shows that the surveyed manufacturing firms have four or five main intermediate suppliers; however, around 94 per cent of the interviewed enterprises stated that no technological transfers had taken place. Thus, the general consensus seemed to be that there was not much transfer of technology through the supplier chain. The technological sustainability of the sunrise firms was not linked to the relation between the input suppliers and their respective consumers. Nevertheless, around 6 per cent of all surveyed firms had modified their technology to conform with the intermediate inputs they procured from their respective providers, suggesting that technically, the sustainability of this group of manufacturers is pivoted on the technology requirements of their main input suppliers, adding to their value as they move to higher stages in the production process.

The product supply chain is examined through the lens of the various production stages, i.e., outputs[10] flowing across different manufacturing firms and increasing in value as they progress forward. This possibility is clear if the network of manufacturing industries is linked from the production of raw materials, intermediate inputs and then to their final products. Most of the firms may not be linked in terms of technology, but a good number are linked in terms of production chain. Table 12 indicates the shares of raw materials, intermediate and other inputs that the selected enterprises have procured within the proximity of the firm's location.

Table 12: Proportion of materials procured by selected firms within the proximity of their location

Firm	%	Firm	%
21st Century Textile Ltd.	0	Nampak Tanzania Ltd.	10
Afri Tea and Coffee Blenders (1963) Ltd.	80	O.I.T.(T) Co Ltd.	100
Alaf Limited	0	Pan Africa Enterprise Ltd.	0
Amboni Plantation Ltd.	0	Plasco Ltd.	0
Ando Roofing Products Ltd.	10	Powerfood Industries	0
Anjari Soda Factory Ltd.	5	Raffia Bags(t) Ltd.	0
Assas Dairies Ltd.	100	Sanitary Appliances and Hardware Ltd.	0
Chemi7 Cotex Industries Ltd.	15	SAS Gas Ltd.	10
Coca-Cola Kwanza Ltd.	20	Shelys Pharmaceuticals Ltd.	0
Darbrew Ltd.	0	Sign Industries Ltd.	55
DPI Simba Ltd.	0	Silafrica Tanzania Ltd.	0
East Africa Cables Ltd.	15	Songas Ltd.	0
Interchick Co. Ltd.	30	Tanalec Ltd.	20
Katani Ltd.	45	Tanga Cement Company Ltd.	5
Kibo Match Group Ltd.	0	Tanga Fresh Ltd.	90
Kilimanjaro Coffee Dealers (1995) Ltd.	100	Tanga Pharmaceutical and Plastics Ltd.	0
Kilombero Sugar Co Ltd.	100	Tanzania Brush Products Ltd.	0
M. M. Integrated Steel Mills Ltd.	10	Tanzania Cigatare Co Ltd.	0
Mansoor Daya Chemicals Ltd.	0	Tanzania Distilleries Ltd.	60
Minjingu Mines and Fertilizers Ltd.	80	Tol Gases Ltd.	0
Morogoro Plastics Ltd.	0	Unoplast Tanzania Ltd.	0
Morogoro Wire Rolling Ltd.	0	Vegetable Oil Industries Ltd.	95

[10] The output of some firms becomes the input for others that purchase these, adding value during the course of production process towards the final good.

Mtibwa Sugar Estates Ltd.	97	VIctoria Moulders Ltd.	0
Murzah Oil Mills Ltd.	2	Vita Foam(t) Ltd.	0
Musoma Textile Mills(t) Ltd.	50		

Source: Computed by authors based on data from the survey.

The distribution of manufacturing firms utilizing suppliers of raw materials, intermediate inputs and other inputs that located within the firm's proximity or suppliers located at some distance away locations is approximately 50/50. A quarter of all firms purchased no less than 50 per cent of their respective inputs from their communes; 8 per cent purchased all necessary input (materials, intermediate and other inputs) from their own locations, confirming the presence of a value chain in the production processes of the firms included in the study. This implies a significant advantage to the growth of the manufacturing sector since local purchases minimize transport costs. In other words, the presence of the well-performing manufacturing industries enhances the economic value of locally-produced products and fosters sustainability of industries through the self-reinforcing interdependence among producers.

According to the literature, distance from the market is one of the factors affecting industrial production: the smaller the proximity to the source of material, the greater the advantage in terms of production costs. In Tanzania this can be one of the missing links. The country still has a large number of manufacturing firms that are dependent on foreign sources in distant places for their materials and intermediate inputs (Table 13).

A look at the table reveals the vast, diverging input sources that can range from a distance of less than one kilometre to over 5,000 km. On average, most inputs travel more than 1,000 km. Only a few firms, particularly those in the food processing industry, have the benefit of inputs at close proximity. This is due to the nature of the material requirements which dictate that these firms are established at the point of source. It may not be possible for all manufacturers to have their input requirements met from local sources, but it is good practice to explore cheaper options before resorting to the distant, more expensive, sources. Locating close to the input source minimizes costs and increases the supply value chain of industries in the economy. Further arguments can be made about the pros and cons of moving closer to inputs or markets, but other factors may also have an effect, including the particular transport requirements of either inputs or outputs, inter alia.

Table 13: Distances of selected firms from their main suppliers (in kilometres)

	Main supplier of			Main supplier of	
	Intermediate inputs	Raw materials		Intermediate inputs	Raw materials
21st Century Textile Ltd.	700	1,400	O.I.T.(T) Co Ltd.	1,580	1,580
Afri Tea and Coffee Blenders (1963) Ltd.		150	Pan Africa Enterprise Ltd.	1,350	1,350
Amboni Plantation Ltd.	450	450	Plasco Ltd.	1,548	3,951
Ando Roofing Products Ltd.	1,400	1,200	Powerfood Industries	12	2,442
Assas Dairies Ltd.		2	Raffia Bags(t) Ltd.	1,500	
Chemi7 Cotex Industries Ltd.	5,888	9,664	Sanitary Appliances andHardware Ltd.	1,800	1,800
Coca-Cola Kwanza Ltd.	1,400	1,400	Shelys Pharmaceuticals Ltd.	2	10

Darbrew Ltd.	1,400	570	Sign Industries Ltd.	2	8
DPI Simba Ltd.	10	10	Tanalec Ltd.	20	800
East Africa Cables Ltd.	10	1,500	Tanga Cement Company Ltd.	1,110	3
Interchick Co. Ltd.	470	470	Tanga Fresh Ltd.	350	270
Katani Ltd.		150	Tanzania Brush Products Ltd.	500	500
Kibo Match Group Ltd.	500	50	Tanzania Cigatare Co Ltd.	997	977
Morogoro Plastics Ltd.	50	500	Tanzania Distilleries Ltd.	2	
Mtibwa Sugar Estates Ltd.	250	20	Tol Gases Ltd.	1,160	
Murzah Oil Mills Ltd.	1,400	1,400	Vegetable Oil Industries Ltd.	10	120
Musoma Textile Mills(t) Ltd.		264	Victoria Moulders Ltd.	1,200	14
Nampak Tanzania Ltd.	1,000	1,200	Vita Foam(t) Ltd.	4,500	4,500
			Average for all firms	1,016	1,167

Source: Computed by authors based on data from the survey.

6.2 Growth prospects and sustainability of emerging manufacturing firms

Sustainability of the manufacturing industries is depending on the existence of supportive conditions. It is inconceivable to picture any industry that is totally dependent on foreign markets; the industrial sector must be able to occupy some niche of the domestic markets, which is then extended to the international arena. Without domestic markets, the industry is overexposed to external shocks and non-domestic fundamentals beyond the control of the country. Nevertheless, survival of the domestic component rests on the country's macroeconomic conditions and their future prospects. If economic growth is rising and if it can be assumed that production structures change gradually while consumer preferences remain stable, then there is a possibility for the currently expanding industries to do even better in the future. According to Porter (1990), these are factors external to the firm and so must be facilitated by the government's industrial policy in order to prosper. Internally, the important conditions of a company include: its structure, strategies and rivalry status; factor conditions; demand conditions; related and supporting industries. Here, the issue of economic growth is concerned with demand. The size and growth rate of local demand as well as the extent to which domestic demand is internationalized are crucially important for the growth and sustainability of the manufacturing sector.

Looking specifically at Tanzania's economic growth in the recent past confirms that GDP has been resilient to shocks and a promising future is ahead if exploitation of the recently discovered opportunities, including natural gas, oil and other resources, is judiciously done. These resources are a potential base for industrial sustainability because the country is becoming more attractive to investors and the manufacturing sector is likely to benefit from the sale of natural resources. Stylized facts have not directly linked the discovery of natural resources with the manufacturing sector growth because of the risk of the 'resources curse'. But it is equally true that there are countries that have made the breakthrough to industrialization through the use of natural resources as their base. Therefore, Tanzania should take advantage of the existing lessons in order to expand its industrial sector by utilizing the available natural resources. When the industrial sector has a strong base, it is highly probable that industries will be able to sustain themselves as they create advantages of economies of scale; first mover advantages (if any) and the established track record in the market becomes quite influential.

Some of the rising industries are directly associated with resources that are abundantly available in Tanzania. For example, agro-processing industries have a bright future as the government has focused on agriculture as a priority sector. Domestic markets (leaving export opportunities aside)

are still plentiful but are currently consuming a lot of agro-based processed products from abroad. This is a sign that agriculture-related processing industries have high potential of staying on a sustainable path, as the country strives to improve agricultural production overall.

The other potential that signals the sustainability of the sunrise industries is the expansion of the regional market that takes into account the East African Community (EAC). Industries in the community can enjoy common market benefits and share synergies in terms of employment and experiences when the labour market becomes fully liberalized and professionals are able to move around the EAC market. A challenge that Tanzania faces is on how to break through stiff competition not only from the EAC member states but also from the rest of the world, including South East Asia. Since the market is available and most of the emerging manufacturing firms are present largely in the domestic market, this suggests that the sustainability of the manufacturing firms that are doing well is feasible. It simply means that the emerging manufacturing firms in Tanzania will have to keep pace with their strongest and fastest-growing competitors elsewhere.

6.3 Role of technical change

The rising manufacturing industries indicated that they were determined to invest in technology for enhanced output. The current global trend is towards more sophisticated, cleaner technology. Investment in new technology brings improved efficiency and increases production without large additions to inputs. In this regard, Tanzania's emerging manufacturing firms have the potential to remain viable as long as they continue to allocate resources to the improvement of their technologies.

6.4 Role of transport and energy infrastructure

It does not need a study to understand the importance of the transport infrastructure and energy for the development of the manufacturing sector. Most goods delivered to and from factories are in bulk and involve high transportation costs, particularly if infrastructure is not well developed and diversified. In this study, a third of the surveyed firms revealed that their location sites had been strategically influenced by the quality of infrastructure. Similarly, energy falls in a category of widely used inputs. Sustainability of the manufacturing firms in Tanzania will be possible only if the on-going efforts to implement the country's power systems master plan are realized. There is no doubt that the manufacturers cannot assume the dual role of power generation and industrial production at the same time. The energy sector should take action to enhance power production at affordable costs.

In view of the importance of infrastructure and the diversity of industries across the country, to secure the future of the manufacturing sector needs among others factors, a reliable mode of transport both to domestic and international markets. Delivery by either road or railway is the most feasible option for the domestic market but road transport entails high costs in maintenance and rehabilitation, particularly if used to distribute heavy materials or containers. The cheapest and the most cost effective means are usually by railway. In our view, the sustainability of the emerging manufacturing firms is heavily reliant on the pace of public investment in railways for the transfer of materials and goods across the country.

With respect to energy, government plans estimate that power shortages will be history by 2014. This is promising. In addition, the discovery of natural gas deposits is good news because it can replace the unreliable generation with hydro power. If energy production and quantity can be assured, minimizing the losses to manufacturers caused by intermittent electricity supply, then the future of the emerging manufacturing firms can be secured to some extent. The sunrise

manufacturing firms have already made a good start; what remains to be done is facilitate their existence in such a manner that mitigates losses.

A study by the Confederation of Tanzania Industries (CTI 2011) estimates that among the Tanzanian manufacturers covered by the survey, energy accounted for about 19 per cent of total production costs. Furthermore, CTI notes that losses due to power problems totalled around TZS 31.7 per year.[11] Unreliability of the electricity supply resulted in a loss of TZS 9.5 billion in corporate tax revenue. For the same reason, about 7,341 jobs are lost in formal manufacturing firms employing ten workers or more. These findings underscore the importance of energy for manufacturing. The results also confirm that the risk of deadlocks exists, and that these can affect the sector and the economy at large if energy is not assured. Plagued by frequent power interferences, manufacturers face damages to machinery due to voltage fluctuations; loss of market competitiveness following price adjustments to offset rising production costs, inter alia; maintaining excess capacity at the factory despite power cuts, shortages, rationing or prolonged blackouts; and frustration from the delay to prospects and plans for new investments and business expansions. All of these add to the overall input costs, while production factors generally remain idle.

6.5 Advantages of coastal economy status

When landlocked countries are compared with coastal economies, there is always a tendency to look at coast economies as having an added advantage, particularly in the context of international transportation. Tanzania is a coastal (seafront) economy and thus has the bonus of low cost transportation to international markets. This possibility is taken into consideration in the quest of the emerging manufacturing firms to achieve viability. Nevertheless, the country's seafront position offers possibilities not only in transporting goods abroad but also opportunities through the re-export of goods (those on transit) to neighbouring landlocked countries. Thus, there is a strong need to push for the construction of railways and rehabilitation of the old lines to connect the upcountry regions and sea ports to neighbouring countries. Given the benefit of its seafront economy, Tanzania's manufacturing sector is likely to be sustainable if the country is able to harness the advantages of direct connectivity to the world as a whole. This would imply lower transactions cost for the country, giving, therefore, a boost to industry and trade.

7 Constraints and challenges facing manufacturing sector

There are many constraints and challenges facing the emerging manufacturing firms in Tanzania. The survey underscored five broad categories of the country's major hurdles: (i) technical problems; (ii) administrative matters; (iii) market challenges; (iv) financial barriers and (v) policy issues. The survey revealed that generally all firms confront these obstacles. In this section, we analyse the main issues hindering the manufacturers of the country.

7.1 Technical challenges

Development of the manufacturing sector is highly contingent on technological change. Only technology improvement can enhance output without necessarily increasing the amounts of other inputs. In this study, manufacturers pointed out some of the constraints that are hindering the sector's performance at a time when the world moves swiftly towards knowledge-based growth and development. In this context, the underscored problems are related to the lack of

[11] Power problems in the CTI study imply irregular power supply and cuts/blackouts.

reliable energy, outdated machines and equipment, inadequate technical knowledge and skills, and lack of access to sophisticated information and communication technology.

Unreliable power supply

On the technical front, one of the leading concerns of the manufacturing industry is the power supply. Indeed, during the past ten years the supply of electricity has been unpredictable. Frequent power rationing, interruptions and low voltages have been responsible for their underdevelopment and the underperformance of the sector. Furthermore, electricity tariffs have almost doubled from US$0.07 per Kwh in December 2007 to US$0.13 per Kwh by January 2012. Compared to an average rate of US$0.05 per Kwh in other developing countries such as China, India and Brazil, this makes it impossible for locally produced products to compete in either domestic or foreign markets.

On the other hand, the government has plans to improve the power supply and there is ample potential for future energy production. But such plans need to be launched with judicious investments in energy. Currently, the majority of electricity in Tanzania is generated from natural gas, and the country still has the advantage of this available source of energy that is not affected by the vagaries of weather, as is the case with hydro-generation.

Old machines and equipment

Outdated machines and equipment, and the inability to access timely new technology were mentioned by a number of manufacturing firms as a serious hindrance. Obsolete machinery needs constant costly maintenance and repair, which has multiplier effects on the competitiveness of manufactured goods Although some manufacturers had made attempts to adopt new technology, several had not been able to use the state-of-art technology prevailing elsewhere especially in the advanced world and emerging economies of South East Asia. The solution to this challenge should come from both the manufacturers and the government through policies that support the acquisition of new technology.

Skills and knowledge

Some manufacturers, notably those in the textiles, pointed out the lack of formal training institutions offering specialized courses in their line of business. This forces them to seek training abroad at high cost, or to hire young professionals not yet specialized. Low technical skills affect machinery operations and service. The quality of manufacturing products could be improved with investment in research and development activities; yet inadequate resources are allocated to RandD for various reasons, either because of shortage of financial resources or ignorance of the role of research and development in the improvement of quality (upgrading), efficiency and market expansion.

Only a few firms in the Tanzania's manufacturing sector provide training outside the country, save for the large-scale exporting firms. In-house training programmes are only arranged when there is a need for workers' orientation to new technology. As the majority of firms do not put a lot of emphasis on training and upgrading, the level of skills in the manufacturing firms is low.

Information and communication technology

Nowadays, information and communication technology (ICT) is a prerequisite for any business to function effectively. ICT has made the convergence of audio-visual and telephones with computer networks possible through a single inter-phase. There are large economic incentives for using a single unified system for management, production and distribution. Industries that have not managed to automate their systems lag behind and are comparatively inefficient. In the

current world manual operations and management are deemed old-fashioned. But because automation requires reasonable human and financial resources, and may at times entail changes in technology, many manufacturing enterprises have not undertaken such a radical reformation. This has an adverse effect on the competitiveness of these firms once they enter international markets where efficiently produced high-quality goods sell at lower prices.

7.2 Administrative challenges

Administrative issues range from macro level (policy dimension) to micro level (firm-specific administrative conditions). In the policy arena, it is argued that manufacturing is hindered by ineffective policies and, in particular, by poor enforcement of rules and regulations, rent-seeking and other weaknesses. Administration in the industrial firms was another problem area and it has been said administrative issues have been a reason for the high staff turnover and weaker firm loyalty. This undermines preservation of the skills and knowledge that have been acquired through experience and learning-by-doing. We focus on six main issues highlighted on the administrative front.

Poor enforcement of laws, rules and regulations

There are several policies that concern requisite production and sales of manufactured goods. Notwithstanding these requirements, competition from low-priced imported counterfeits was cited as a serious problem. Tanzania is one of the countries where sub-standard manufactured goods are sold alongside the domestically-produced quality goods. Although laws do exist, loopholes make the import of these low-priced goods possible, with dire consequences for the domestic manufacturing enterprises. If Tanzania's manufacturers comply with the required quality standard, it cannot compete with the low-priced imports, and the emerging enterprises have called on the government to take extensive measures to curb this impasse so as to reinstate level playing field. Indeed, the government has taken some noteworthy measures on counterfeit electronics and pharmaceutical products, for example; now manufacturers have insisted that these measures be extended to all imported goods. A good example is automotive spare parts: these, tyres included, are of very poor quality and are a risk to people's lives but no serious action has been taken to control their circulation in the market.

Manufacturers believed that if the market were a level playing field, there would be more investment in manufacturing of different commodities because there is a niche for such products on the domestic market and people would not resort to purchasing imported sub-standard commodities. In view of this challenge, it is the government which has the lead role in controlling unscrupulous dealers in the market.

Complex legal and institutional framework

Manufacturers highlighted bureaucracy and complicated systems as another bottleneck to performance. There is considerable scope for improvement in the investment climate. It was pointed by some of the organizations (e.g., the milk and food processing firms) that there were too many regulators for the same products, each of which entails costs. Requirements for either confirming or assessing quality mean that manufacturers work through a long chain of public organizations for the assessment of literally the same things. In particular, the government has established a number of regulatory bodies to monitor production and distribution of industrial goods. These include the Food and Drugs Authority (TFDA), Tanzania Bureau of Standards (TBS), the Government Chemist Laboratory Agency (GCLA), Occupational Safety and Health Agency (OSHA) and the Tanzania Atomic Energy Commission (TAEC). Compliance to requirements issued by multiple agencies creates a challenge and expensive undertaking, including:

i) high fees for inspection of premises and product-testing that are related the actual costs incurred;

ii) delays in the clearance of goods from border ports and airports as importers are forced to chase through widely-scattered agencies;

iii) permits certification causes unnecessary delays for start-up industries;

iv) customer services of most agencies are aloof, and it has been alleged that in some cases bribes have been asked.

All in all, this kind of atmosphere imposes impediments on the manufacturers, and businesses in general. Thus it is advisable that regulations should be collected under one roof wherever possible so as to minimize the time and financial resources needed to accomplish assessment and regulation processes.

Negative attitude against consumption of locally produced goods

In Tanzania there is a tendency for consumers to be more skewed towards the consumption of imported goods rather than the domestically produced. Manufacturers argued that both public and private consumers have not given domestic goods their due weight, thereby adding an unnecessary burden on the domestic firms. The contention is that some imported goods, although of lesser quality, sell at higher prices than domestically produced items. Manufacturers stressed that the procurement policy of public institutions and even private entities has to favour commodities produced in the country. Imported goods should be considered only when there is shortage of the required products within the country. Nurturing an attitude towards the consumption of Tanzanian produced commodities is a strategic way of boosting domestic markets. Domestic products must be at the top of the shopping list except when buyers are totally convinced that there is a reasonable difference in quality. The pro-domestic attitude should be propagated not only to institutions but also to the general public to enable Tanzanians create markets and jobs for themselves.

Employees compensation and work morale

The survey uncovered evidence that employees in some manufacturing firms were not satisfied with the salaries and wages. This challenge is in the manufacturing domain and should thus be resolved by the relevant management. If remuneration is low, worker morale is undermined, having an adverse impact on productivity. In a growing economy like Tanzania, issues related to compensation are to be expected, but the solution is with the firms to ascertain that sufficient allocations are made for incentives.

But it also became apparent that some of the manufacturers have concerns regarding worker attitude and culture; despite adequate compensation, people occasionally slack, and do not give their best effort. This problem cannot be downplayed: work attitude is one of the cultural aspects of a society, thus measures have to be introduced to nurture the right mindset among the country's professionals with respect to time management and work attitude. The government, enterprises, academic institutions and other stakeholders have an interest in moulding worker behaviour, usually a gradual process. If workers advocate for higher pay, they should also be ready to exert greater effort to achieve maximum fulfilment of the firm's goals.

Poor customer service

With respect to marketing, this study noted that customer service was unsatisfactory in most of the manufacturing firms. This challenge was widely mentioned although there is room for improving promotional activities and for attracting customers. Responsibility for this issue is in

the domain of the manufacturing firm management. Manufacturers have called on public and private entities as well as all Tanzanians to favour domestic goods, but they should also make a concerted effort to capture new market niches through advanced marketing techniques and strategic treatment of their customers. Consumer sovereignty can be influenced by distribution channels if they are effective enough to outweigh foreign suppliers who will win favour, for example, with good customer service. Industrial firms may need to take deliberate steps to train personnel so that these have the competence to help expand and sustain clientele.

Management challenges

In some of the firms there was failure to separate business management from ownership and other personal activities. Accounting procedures did not conform to international standards, a fact that has negative connotations on records and profitability assessment. This problem is relevant for the manufacturing firms engulfed by management difficulties. Management training could provide a solution.

Personnel management was another area of great concern in some firms. There is a gap in human resources management because labour laws can at times be violated either with intent or from ignorance. Enterprises complained about rigid laws and the ensuring difficulties in firing misbehaving staff. This is open to debate because such laws have been introduced to safeguard the rights of workers, and to relax these to give added protection to employers may be strongly challenged. The solution could be appropriate employer screening procedures during the employment process to avoid the selection of unsuitable workers and the subsequent need for frequent firing. Avoiding cheap labour and securing qualified employees could help mitigate work place disputes.

7.3 Financial challenges

Manufacturing firms in Tanzania have several financial challenges, including access to financial resources and high cost of capital. A few of the issues highlighted by the firms include the following:

High cost of working capital

Manufacturers considered the access costs to working capital to be too high. Most firms depend on loans from banks and other financial institutions for the running of their day-to-day administrative and production activities. Indeed, interest rates charged by these financial institutions range between 16 to 25 per cent. This, coupled with the difficult procedures to access credits, adversely affects the growth of industries in Tanzania. The absence of development banks or other financial institutions that could provide long-term development credits at lower interest rates is another limitation on the efforts of manufacturing investors. This is due to the fact that the country's working capital structure is skewed towards debt, a reflection of the stock market's infant status and that most firms are still unlisted. Some of the firms operating with excess capacity have blamed insufficient working capital, among other factors, for their inefficiency.

The solution to the financial deadlock lies in the hands of all stakeholders of the financial sector development. Among the reasons mentioned for the soaring costs of borrowing is the high risk in the context of an asymmetric information environment where no reliable credit information is available. The establishment of a credit information bureau could provide relief because 'prime customer status' could be awarded to high-rating organizations, a privilege which could provide better interest charges with financial institutes. Generally, reducing credit risk in the economy and creating a more competitive financial sector may mitigate the problem of high costs of

resources. From a policy point of view, macroeconomic stability has to be assured in order to reduce uncertainty, particularly with respect to inflation and real interest rates. This will enable lenders to moderate their interest rates based on their assessments of the acknowledged fundamentals in the economy. Other than this, manufacturing firms should continue to build rapport that can influence lenders to offer them attractive interest rates.

High cost of raw material and other inputs

Industries cited the high costs of raw materials and other inputs as one of their major impediments. High costs are generated by long distances between location and material sources; rising energy costs; and inflation, particularly during the recent past. High production costs generally translate into higher prices for the final product, and compromised competitiveness on the world market. To address this challenge, policy options, including stabilization of prices, construction and rehabilitation of key infrastructures to reduce transport cost and firms' investment in efficient technology are required.

Depreciation of nominal exchange rate

Manufacturers pointed to the exchange rate depreciation as a challenge to their operations. As was noted earlier, manufacturing inputs are largely imported and currency depreciations simply manifest as increased prices for imports and decreased prices for exports. In theory, this means increased competitiveness and more exports. However, as Tanzania is a net importer of both inputs and final products, the question is whether the country can become exchange rate-competitive since depreciation is tantamount to giving discount in the market for commodities in short supply. As the country manufactures a reasonable quantity of tradable goods, depreciation cannot be fruitful in terms of an improvement in external balance and subsequent growth. The solution to this dilemma is within the jurisdiction of the Central Bank which needs to find the right balance by critically examining the country's export-import configuration and the implications of exchange rate dynamics.

High energy cost

The high cost of energy is causing manufacturers to turn to expensive power sources to lessen the effects of electricity cuts and unstable supplies. Power backup systems and the use of fuel generators are dearly expensive. The suggestion is that the government should continue to invest in the energy infrastructure to secure the generation of reliable and affordable energy. Incentives to private investors to engage in energy production are necessary. Potential investors have expressed concerns about being able to sell energy at the market rate, and the type of government contract needed for the distribution of electricity through TANESCO. A clear arrangement indicating that the private sector could benefit from the production of electricity, like any other commodity, could attract investments in energy.

7.4 Market challenges

A major market challenge of the manufacturers is the competition from products produced outside the country. Manufacturers point to some examples of imported goods (food processing) which are more competitively prices than those produced in Tanzania but are of lower or sub-standard quality. If Tanzanian firms are committed to the manufacture of quality products, they will not be able to compete. The manufacturing firms are calling for a level playing field, i.e., an environment where they will be able to compete fairly. It is therefore important to restrict the sale of products with varying quality standards.

The other challenge mentioned was the distance from the markets. Due to poor transport infrastructure, some parts of the market are inaccessible and transportation costs too high. Large

sections of the domestic markets are unexploited owing to their difficult-to-reach locations. This challenge revolves around the need for infrastructure development.

The problem of income growth has a bearing on the sales of the manufacturing enterprises. The point is that maintaining high quality and reasonable prices is a problem because incomes in the country are largely insufficient and the purchase of high quality goods can be inhibitive for many. Because of poverty, most people tend to go for low-priced commodities even when they are aware that quality is not up to standard. This poses an important challenge and is a prerequisite for securing a stable market for Tanzania's quality industrial goods. It calls for poverty alleviation and increasing output and incomes, especially for farmers (who are the majority in the country). The income issue has explained the existence of a wide market for cheap manufactured goods imported from abroad.

7.5 Policy challenges

Manufacturing companies have policy impediments that include tax laws, local government bylaws, environmental legislation requirements, etc. We discuss briefly the most important challenges that were pointed out by the manufacturers as being critical to their operations. It was also acknowledged that some firm-specific policies are hindering manufacturing performance.

Nuisance taxes

A good number of the interviewed enterprises singled out the numerous taxes paid to both the central and local governments. Manufacturers felt that tax payment should be consolidated in a singular context to enable a firm pay all its dues once and at a specified place. The multiplicity of taxes is a disincentive to taxpayers, numerous taxes and fees increase the related taxation processes as well as costs for the firms, and frustrate their operations. For instance, firms in Tanzania pay a 6 per cent levy on private company payroll for skills and development, 0.3 per cent of annual turnover as city service levy, 5 per cent crop levy charged on farmgate prices, just to mention a few. The point here is that cumulative levies increase the cost of doing business and reduce competitiveness in both domestic and external markets. It follows that consolidation of taxes to reduce procedures and bureaucracy is important not only for the manufacturers but also for other entities in the country. Reforms to simplify the tax system are part and parcel of the measures to enhance manufacturing sector performance. Government reform efforts must focus on resolving the tax dilemma in order to create incentives for manufacturers to pay taxes.

In addition, there were complaints that rates were too high. This contention needs clarification, as manufacturers felt disadvantaged in the comparison of taxes paid versus their return in terms of public services including infrastructure, energy and other amenities. This implies that the government is either charging disproportionate tax rates or that it has not been able to proportionately transfer the value of the collected taxes to the provision of the public goods and services that are vital to the manufacturers.

Too many regulations

In some cases, manufacturers indicated that they were over-regulated, due in part to the existence of a multiplicity of regulators. Rules and regulations overlap, and compliance with all is costly. Consolidation of the regulatory process is necessary for coherence and the easiness with which rules and regulations can be observed. For example, the milk processing industries have cross-cutting complains that they have to go through many duplicate procedures for quality control and regulation purposes, and the numerous processes do nothing to improve quality but create costs as stipulated fees and wasted time. Reforms to synchronize regulatory processes should be very useful in addressing this bottleneck.

Waste disposal challenge

Local governments, particularly city councils, have bylaws for waste disposal in their respective areas, but these have not been effective in cleaning the surroundings or the drainage systems, causing problems of flooded drains, among others. Councils have also been amiss in liquid waste removal in areas without sewerage systems, entailing high costs for their disposal for the manufacturing firms.

Weaknesses in the firm-specific policies

Some firms have unsound policies that are a hindrance to production processes. Human resources policies in a number of industries lack the elements that could motivate workers who do not perform to the best of their ability; they may shirk, or be tempted by rent-seeking activities. Restructuring is needed for a change in corporate culture to make firms more profitable and competitive. Improving total productivity, raising quality, upgrading marketing strategy and encouraging new forms of manufacturing systems are important internal goals, attainable at the firm level. These could be achieved through changes in production techniques, equipment, personnel, reorganization of management and financial structures. The success of these sector-specific strategies depend on the performance of other supportive policies.

Coherence of trade and related policies for the development of the manufacturing sector

Trade and other related policies are not supportive to industrial development. This has created poor exploitation of synergies within the industrial sector, and this was mentioned by a number of the manufacturing firms as constituting one of the challenges they face. There were also complaints that the government was over-concentrated on trade at the expense of the manufacturing sector. The manufacturers summed up the situation with observations such as: 'how can we trade when we have nothing? We are exposed to too much competition while we are not ready and this way we are going to kill our industry'. Coherency of trade policies can stimulate the development of the sector.

8 Conclusion and policy recommendations

In this section we briefly highlight some key conclusions and then summarize the policy recommendations that can be derived from the findings of this study. The sample of the firms included in the study was generally representative of the emerging manufacturing industries in Tanzania and so we believe that our findings, conclusions and recommendations are relevant for the country's manufacturing sector overall.

8.1 Conclusion

Emerging manufacturing firms in Tanzania are characterized by a high output growth rate, as is evidenced by the increase in exports of some of the manufacturing firms. Employment had dropped in the recent past because of the global economics crisis, but output in real terms has remained stable. More than a half of the interviewed manufacturing enterprises perceived their technology to be superior in comparison to their competitors while a good number of the remaining enterprises considered their technology to match that of their main competitors. Research and development activities had been prioritized by the emerging manufacturing enterprises and this is one element of their success. The majority of the firms have a clientele base of more than one hundred large customers for their products both in the country and outside. Although not a positive observation, it is important to note that material inputs for the emerging manufacturing firms in Tanzania (and particularly the intermediate goods) are largely

imported. On average, almost 70 per cent of inputs are imported, and a 100 per cent import of inputs was the norm for a third of all interviewed firms.

In analysing the elements contributing to the success of the rising manufacturing firms, it was observed that the supportive institutional and legal frameworks put in place by the government for strengthening private sector investment had enabled investors to raise industrial performance. The key elements of success are summarized next. Many firm-specific factors are also acknowledged as constituting the main reason for the increasing achievements of the sector.

Viability of the emerging manufacturing firms hinges not only on the performance of the enterprises but also on the macroeconomic aspects of public policy. The manufacturing sector can be sustainable in a stable macroeconomic environment, and thus its future is largely underpinned by the stance of macroeconomic policies. Nevertheless, to remain sustainable, manufacturing firms have to be competitive and continually strive to adopt new technologies. In the atmosphere of policy reforms being carried out by the government, the manufacturing enterprises have dealt with their industry-specific factors for sustainable growth.

The constraints and challenges facing the manufacturing sector were reviewed, and the findings confirm that many impediments do exist for new entrants to the sector in Tanzania. The survey underscored five broad categories of the major challenges facing the country's manufacturing sector and these are:

i) *Technical challenges:* unreliable power supply, use of old machines and equipment; lack of proficient manpower; and inadequate information and communication technology were the most important issues.

ii) *Administrative challenges:* issues range from the macro level (policy dimension) to the micro level (firm-specific administrative conditions). With regard to the policy arena, manufacturing is constrained by ineffective policies, particularly because of poor enforcement of laws, complex legal and institutional frameworks, as well as a disapproving attitude towards the use of locally produced goods which has led to over-consumption of foreign products.

iii) *Financial challenges:* difficulties in accessing financial resources and the high cost of capital, which can be explained by the fact that firms operate largely on borrowed capital acquired at high interest rates; raw material and other inputs are expensive; depreciation of the nominal exchange rate that adversely affects the cost of imported inputs; and unbearable cost of energy.

iv) *Market challenges*: competition from products produced abroad. Some imported goods, which are more price-competitive than those made in Tanzania are low-quality counterfeits.

v) *Policy challenges*: policy hindrances include tax laws, local government bylaws, environmental legislation requirements, etc., payable to both the central and local governments. Among other concerns is the waste disposal question which has not been addressed adequately. Weaknesses in firm-specific policies, comprising among others, the lack of human resource incentives and motivation.

8.2 Policy implications

Following the main conclusions of this study, some important policy implications are highlighted. The outstanding policy issues are focused on addressing the observed challenges and constraints to Tanzania's manufacturing sector:

i) Power generation should be expanded to build confidence in the reliability of electricity supply to manufacturers. Gas and other reliable sources of energy, those not susceptible to weather changes like hydro-generation, have to be prioritized. Speeding up the implementation of the national Power Systems Master Plan is of utmost importance for the growth and development of the manufacturing sector.

ii) Enhanced investment in science and technology should be given greater weight to stimulate industrial development. On this front, allocation of more funds to postgraduate education on specialized manufacturing programmes and applied research are a prerequisite. This will promote knowledge and skills development as well as a wider application of ICT.

iii) To foster competition in the market, targeted action to control the import of cheap counterfeits should be put in place and enforced across all types of imported goods.

iv) Further modification to tax reform is recommended. Tax rates have to be reviewed and synchronized to reduce multiple procedures, to lower compliance costs, and to eliminate all nuisance taxes.

v) Measures need to be taken to promote the consumption of domestic goods so as to build a tradition of consuming Tanzanian-made products and thus expand the market for local articles.

vi) Financial reforms have to be continued. Attention needs to be directed on lowering financial risks in the market to help reduce interest rates. This is pertinent to decreasing the cost of capital.

vii) Monetary policy, and in particular exchange rate management, have to be implemented for greater price stability. This is necessary for controlling the costs of machinery/equipment and intermediate inputs procurement.

viii) Regulatory agencies have to be reorganized. Efforts are needed to guide the regulatory process so that the multiplicity of the regulators is eliminated. This is essential for reducing costs, and enhancing regulation effectiveness and coherence.

ix) A comprehensive policy for natural resources management is crucial. This is timely now that gas, oil, and other minerals and iron have been discovered, inter alia, and the envisaged extractions must be guided by efforts towards public benefit.

List of abbreviations

ALAF Ltd.	Aluminium Africa Limited
BIS	Basic industries strategy
BRELA	Business Registrations and Licensing Agency
CARMATEC	Centre for Agricultural Mechanization and Rural Technology

CEs	Complex establishments
CTI	Confederation of Tanzania Industries
DSE	Dar es Salaam Stock Exchange
FDI	Foreign direct investment
GCLA	Government Chemist Laboratory Agency
GDP	Gross domestic product
ICT	Information and communication technology
ISI	Import substitution industrialization
Mie's	Micro enterprises
MITM	Ministry of Industry, Trade and Marketing
MVA	Manufacturing value added
NBS	National Bureau of Statistics
OSHA	Occupational Safety and Health Agency
R and D	Research and development
SEs	Small enterprises
SIDP	Sustainable Industrial Development Policy
SMEs	Small and medium enterprises
SSEs	Single and independent establishments
TAEC	Tanzania Atomic Energy Commission
TANESCO	Tanzania Electric Supply Company
TBS	Tanzania Bureau of Standards
TCCIA	Tanzania Chamber of Commerce, Industry and Agriculture
TEMDO	Tanzania Engineering and Manufacturing Design Organization
TFDA	Tanzania Food and Drugs Authority
TIC	Tanzania Investments Centre
TIRDO	Tanzania Industrial Research and Development Organization
TRA	Tanzania Revenue Authority
URT	United Republic of Tanzania

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