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Does Privatisation Improve Financial and Operating Performance of a Firm? The Case of Tanzania Breweries Ltd

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Abstract

Extant theoretical and empirical literature show that profitability, efficiency, capital expenditure, output and dividends improve (increase) after privatisation. However, previous studies showed a mixture of results on employment levels after privatisation: some showing increases and some showing decreases in employment levels after privatisation. Previous studies also showed that leverage levels decrease after privatisation. In this study the author reviewed some literature regarding privatisation initiatives carried out in various countries and their repercussions on financial and operating performance of firms being privatised. He then used the case of Tanzania Breweries Ltd and compared its pre- and post-privatisation performance levels to evaluate whether there was any post-privatisation improvement. The t-test Paired Two Sample for Means available in Data Analysis Tool of Ms Excel was used to calculate pre- and post-privatisation means (averages) and mean differences for selected performance metrics and also for hypotheses testing. The results show that profitability (in terms of return on sales, return on assets and return on equity), operating efficiency (in terms of sales efficiency and net income efficiency), capital expenditure (in terms of capital expenditure to sales), output (in terms of hectolitres produced and real sales), dividend payout (in terms of dividend to sales ratio and dividend per share) and earnings in terms of earnings per share improved (increased) significantly after privatisation. Capital expenditure in terms of capital expenditure to assets increased but there was no strong evidence to support that the increase was attributable to privatisation or it was just by chance. Financial leverage (in terms of debt to assets and debt to equity) and number of employees improved (decreased) significantly after privatisation.

Keywords: Privatisation, Financial Performance, Operating Performance, State-Owned-Enterprises, SOEs, Performance Metrics

1. Introduction

“If you want to know the end, look at the beginning.”
(African Proverb)

1.1. Background of the Study

Since coming into power of Margaret Thatcher in United Kingdom in 1979 the wave of privatisation swept market, socialist and mixed economies. Normally state-owned enterprises (SOEs) face inefficiencies originating

from politicians' interference leading into excess employment, operating inefficiencies (Chen *et al*, 2021), low capital investment, low output, high operating costs and huge losses or unreasonably low profit levels, high gearing and low dividends (Čučković, *et al*, 2011). Due to inefficiencies (Čučković *et al*, 2011) and lack of profitability resulted from politicians' interference on SOEs, governments in both developed and developing countries embarked in privatisation programmes to heal unhealthy SOEs from their maladies (Čučković, *et al*, 2011; Redda, 2007; Bachiller, 2017 and Kisenge, 2013). The wave of privatisation started to sweep developed countries to the larger extent than developing countries but in 1990s we evidenced an important shift in both the industries being privatised and in the number of countries which participated in privatisation. For example, in 1990s and earlier 2000s we witnessed more privatisations in many sectors including highly regulated industries such as banking and telecommunications and electronic utilities (Čučković, *et al*, 2011) in both developed and developing countries, and privatisation programmes are clearly spreading throughout the developing economies. The percentage of privatisations in developing countries as a proportion of total global privatisations increased (Megginson *et al*, 2001).

Privatisation in this paper is taken as broadly defined as the deliberate sale by a government of SOEs or assets to private economic agents (Megginson *et al*, 2001). It is also defined as the sale of a state-owned firm to private sector (Cuervo *et al*, 2000). However, the sale of a state-owned firm can be wholly or partial in the sense that the government may sell all of its stake or a portion thereof.

Extant empirical studies show that privatisation of SOEs results into significant improvement in corporate performance (Chen, *et al*, 2021, Čučković, *et al*, 2011; Dewenter *et al*, 2001 and D'Souza, *et al*, 2005). However, there is a mixture of results on employment levels resulting from privatisation. Bortolotti, *et al* (2001) pointed out that privatisation improves significantly profitability, output, operating efficiency and capital investment spending whereas employment and leverage decline significantly as a result of privatisation.

Extant privatisation studies carried out in Tanzania focused on privatization process and asset valuation (Waigama, 2008), the role of privatisation in providing solid waste collection services (Kaare, 2002), performance of privatised (Mongula, 2002) and the impact of privatisation of a bank (Kisenge, 2013).

A case of Tanzania Breweries Ltd (TBL) was taken to assess performance improvement emanating from privatisation. Ratios were calculated and analysed from two sets of TBL's financial statements and their implications are explored. The first set covered the periods 1985-1992 and the second one covered 1994-2001. The year 1993 was excluded from the analysis because it was the year in which TBL was privatised. In this study the author examined financial and operating performance of TBL to illustrate whether privatisation of SOEs improves corporate performance. Corporate performance in the context of this paper focuses on corporate profitability, operating efficiency, capital investment, output improvement, gearing, payment of dividends to shareholders and earnings available to shareholders.

Profitability analysis presented and analysed includes the use of profitability ratios which are return to sales = net profit after tax/total sales revenue; return on assets = net profit after tax/total sales revenue; and return on equity = net profit after tax/total equity.

Operating performance is presented and analysed in terms of ratios namely sales efficiency = total sales revenue/total number of employees, and net income efficiency = net profit after tax/total number of employees. Capital investment spending ratios analysed and presented include capital expenditure to sales = capital expenditure/sales; and capital expenditure to total assets = capital expenditure/total assets.

Output improvement analysis includes analysis of sales in physical term = hectolitres of beer produced, and sales (in real terms) = nominal sales x (consumer price index_{Reference year}/consumer price index_{Base year}).

Analysis of gearing ratios includes analysis of debt to assets = total debt/total assets and debt to equity = total debt/total equity whereas dividend analysis includes dividend per share = total dividend paid/number of ordinary shares issued and dividend to sales = dividend/total sales revenue.

Earnings available to shareholders is analysed in terms of earnings per share = profit after tax/number of issued ordinary shares.

1.2. Reasons for Privatisation of SOEs

Čučković, *et al* (2011), Megginson *et al* (2001), Shirley (1992), Bachiller (2017), Bachiller (2012), Bartolotti (2001), Dewenter and Malatesta (2001), Estrin and Pelletier (2018), Megginson and Netter (2001), Balza *et al* (2013), Arocena and Oliveros (2012), Mongula (2002) and Chen *et al* (2021) are some of researchers who provided some arguments in support of privatisation programmes and policies being implemented by governments mostly since 1980's. Some of their reasons for embracing privatisation programmes are discussed here below:

1.2.1. Presence of insignificant Market Failure

Megginson *et al* (2001) pointed out that privatisation has positive impact and hence appealing in areas where market failure is noticeably insignificant, that is market is competitive or can become readily competitive. In the same vein they argue that privatisation is less appropriate for public goods and natural monopolies since competitive considerations are weaker in these respects.

1.2.2. Contracting Ability by Owners in Private Firms impacts the Efficiency

The government ownership of firms results in problems in defining the goals of the firm. They pointed out that while the shareholder-wealth-maximising model of corporate organisation is becoming increasingly dominant, in part because of the advantage of having a well-defined corporate goal; governments have many objectives other than profit or shareholder-wealth-maximisation (Čučković, *et al*, 2011; Megginson *et al*, 2001; and Shirley, 1992). Further, government objectives can change from one regime to the next hence affecting the SOEs. Megginson *et al* (2001) also pointed out that in a public enterprise, owners (citizens) are less able to influence managers to act in their interests which is not the case in a privately-owned enterprise.

1.2.3. The Cost-Benefits and Easy with which Government can intervene in Firm's Operations

Čučković, *et al* (2011) and Megginson *et al* (2001) pointed out that government can intervene in the operations of any firm being public or private; however, it is more costly for the government to intervene in a private firm than in a SOE. Thus, they argued, that to the extent that government intervention has greater costs than benefits, private ownership is preferred to public ownership.

1.2.4. Less-prosperous Firms Reliance on Government for Funding leading to "Soft" Budget Constraints

The government is unlikely to allow a large SOE to become bankrupt and as such the discipline enforced on private firms by capital markets and the threat of financial distress is less important for SOEs (Shirley, 1992; Megginson and Netter, 2001; Kouser *et al*, 2011).

1.2.5. Proceeds from Privatisation can impact Efficiency through its Effect on Government Fiscal Conditions

Privatisation in some cases has been used as a fiscal instrument to cover (reduce) fiscal deficit through selling SOEs (Megginson and Netter, 2001; Čučković, *et al*, 2011; Shirley, 1992). They pointed out that proceeds from privatisation of SOEs have helped reduce fiscal deficit in many countries. They also pointed out that in some instances proceeds from privatisation of SOEs are saved by governments instead of being spent.

1.2.6. Privatisation improves operational Efficiency

As a results of privatisation operational efficiency in terms of output per employee, sales per employee, net income per employee, and sales in real terms improves (Čučković, *et al*, 2011; Kouser *et al*, 2011; Arocena and Oliveros, 2012; Bachiller, 2012, Bachiller, 2017; Mongula, 2002; Estrin and Pelletier, 2018 and Balza *et al*, 2013).

1.2.7. Improvement of productivity

Most studies on productivity showed post-privatisation productivity improvement to differing extents (Chen *et al*, 2021; Mongula, 2002 and Kouser *et al* (2011).

1.2.8. Privatisation can help develop Factor, Product and Security Markets and Institutions

The privatisation has a role to play in development of factor and product markets and security markets (Čučković, *et al*, 2011; Megginson and Netter, 2001). Thus, to the extent that privatisation promotes competition, it can have important role to play in enhancement of efficiency; but at the same time the strength of markets prior to privatisation also has an impact on the success (or otherwise) on post-privatisation performance, Megginson and Netter (2001).

1.2.9. Profitability improvement

One of the main motives for privatisation is that empirical evidence showed that post-privatisation profitability improved significantly (Kouser *et al*, 2011; Čučković, *et al*, 2011; Bachiller, 2017; Bartolotti *et al*, 2001; Dewenter and Malatesta, 2001; Estrin and Pelletier, 2018; Megginson and Netter, 2001 and Balza *et al*, 2013).

1.3. The Aim of the Study

The aim of the study is to find the empirical evidence on whether privatisation results into improvement on financial and operating performance of a firm in Tanzania. Extant empirical literature shows that no similar study on post-privatisation financial and operating performance at micro/ firm level has been carried out in Tanzania. The rest of this paper is organised as follows: Section 2 provides the literature review, section 3 provides data and methodology used, section 4 presents and discusses research results (findings) and section 5 provides the concluding remarks and areas for further researches.

2. Literature Review

“However far a stream flows, it doesn’t forget its origin.”

(Nigerian, African Proverb)

“The child you sired hasn’t sired you.”

(Somalia, African Proverb)

In this section the researcher visits the work of previous researchers on privatisation and its effects to SOEs. Theoretical and empirical studies regarding the multi-national and multi-industry privatisation; case study and industry-specific privatisation; and empirical research in privatisation are visited.

2.1. Multi-national and multi-industry Research on Performance of privatised Firms

The effect of privatisation on financial and operating efficiency for multi-national and multi-industry has been researched by various writers including (Chen *et al*, 2021; Earle and Shpak, 2019; Al Hinai, 2016); Megginson and Netter (2001); and Dewenter and Malatesta (2001).

Chen, *et al* (2021) carried out a study on how ownership affects productivity of SOEs in China and found that on average privately owned firms are 53% more productive than SOEs, but the benefits of privatization take several years to fully materialize. They also found that the said productivity gap is smaller among larger firms and

economically more liberal times (later period of privatisation) and places (South and Coast China) than in economically less liberal times (beginning of privatisation) and places (North and Inland) and it is larger in consumer-facing and high-tech industries. In other words, they found that privatisation improved productivity level to greater extent in small and medium enterprises than in larger ones and in more economically liberal times and places than elsewhere. In the same vein they also found that productivity improvement was more noticed in sectors dealing with final goods and high-tech than “heavy” industries.

The existence of SOEs is associated with excess employment, excess budget spending for unnecessary subsidies, lack of profits or unreasonably low profits (Earle and Shpak, 2019; Al Hinai, 2016), lack of incentives for technological and skills improvements, low output and productivity levels, low wages (Earle and Shpak, 2019). However, regarding employment, Earle and Shpak (2019) found that SOEs are generally associated with excess employment for low-skilled workers. Al Hinai (2016) undertook a study on comparison between pre- and post-privatisation financial and operating performance of 61 Egyptian companies over a period of 16 years and a comparison between those 61 privatized SOEs and private companies over 16 years. The method of privatisation for the companies was initial public offerings (IPO). Findings of Al Hinai (2016) showed significant positive post-privatisation change in profitability, and operating efficiency and a negative impact on the leverage and employment level. The comparison of post-privatisation results to those of private firms revealed that there was significant increase in EBIT and ROE with no significance for ROS and ROA. For total debt to total equity ratio there was no significant improvement while employment level change was significant.

Balza *et al* (2013) explored the relationship between private sector participation, institutional reform, and performance of firms in electricity sector in 18 Latin American countries in the span of four decades. Their findings suggested that privatisation results into improvements in quality and efficiency rather than accessibility to electricity service. They also found that the quality and stability of regulatory institutions was strongly associated with accessibility to service regardless of the level of private sector participation.

Arocena *et al* (2012) undertook a study on post-privatisation effect on efficiency in Spain: comparing privatised firms and their counterparts before privatisation. Using data envelopment analysis (DEA) and regression analysis, they found that there were no significant differences in efficiency between the SOEs and privatised firms, the efficiency of private counterparts improved significantly and the efficiency of competitors during the same post-privatisation showed no significant improvement.

Arcas and Bachiller (2010) studied the role of organisational changes and contextual factors in affecting the operating performance of private European companies. Their findings show that smaller and non-regulated firms and private firms through public offer perform better than bigger, regulated, and privatised by private sale method. They also found that privatised Eastern European companies were less profitable than counterparts from other European countries. Their findings also suggest that organisational changes are more difficult to introduce in privatisation through private sale and in bigger and regulated companies. Arcas and Bachiller (2010) also suggest that less developed institutional context limit post-privatisation performance improvement.

Bachiller, (2012) undertook research on privatisation of 38 European firms and found that performance of utility firms improved significantly after privatisation. However, there was no sufficient evidence to conclude whether post-privatisation of firms in other sectors improved or not.

Dewenter and Malatesta (2001) found and documented from their study of privatisation effect of 63 companies privatised during the period from 1981 to 1993. They documented increases on profitability measured as return on sales. However, their study documented that profitability as measured by earnings before interest and taxes to sales declined insignificantly as a result of privatisation. With their sample they also documented that privately-owned companies are more profitable and efficient than SOEs.

Bartolotti, D’Souza, Fantini and Megginson (2001) carried out a study in 25 countries on 31 telecommunication firms privatised during the period from October 1981 to November 1998 and found that post-privatisation profitability, output, operating efficiency and capital investment spending increase significantly, whereas

employment and leverage decline significantly. Their results show that over two-thirds of all firms in the sample experienced a post-privatisation increase in operating income to sales of 74.1%, ROS by 70.4%, ROA by 66.7%. These increases are significant at 1%, 5% and 10% levels of significant. However, they found that 59.3% of the firms experienced insignificant increase in ROE.

2.2. Case Study and Industry-specific Privatisation Research

The effect of privatisation on financial and operating efficiency in the form of case study and industry-specific privatisation researches were carried out by various writers including Čučković, *et al* (2011), Branston (2000); Buckland and Frasser (2002); and Portelli and Narula (2004). These studies involved a single firm or a small number of firms in a single industry. The researchers here normally used econometrics to study the effect of privatisation of SOEs.

Čučković, *et al* (2011) investigated the impact of marketization and privatisation of the telecommunication (Croatian Telecom (HT)) and gas and oil industries (gas company INA) in Croatia in order to determine whether privatisation improves business efficiency, employment levels, investment, service quality, diversity and prices or not. They found that HT maximised net proceeds badly needed for the budget of the country and offered a good investment opportunity for domestic institutional investors, mainly the state and private pension funds, as well as small shareholders through the offer of substantial price discounts to former and new employees. This resulted into improved liquidity at Zagreb Stock Exchange as it contributed significantly to the general volume of transactions. The study also found that sales revenue initially remained stagnant amid increased competition, regulation, restructuring of the market and diversification of services (from 2004 to 2006). Later on, revenues from fixed telephony declined by 37%, revenues from mobile telephony increase by 17% and revenues from internet services increased by 184% (from 2006 to 2009). Subsequently (after 2009), HT's market share in internet services and mobile services started to decrease slightly due to increased competition resulting into a slight decline in sales revenue in these business segments. Čučković, *et al* (2011) also pointed out that HT's improved post-privatisation performance was associated with falling levels of employment by 31% (from 8,862 to 6,116 employees). However, HT's labour productivity (revenue per employee) improved by 56% as a result of HT's privatisation. The HT's productivity gains were mainly achieved through substantial reduction of labour and increase in sales revenue after privatisation. This substantial and dramatic drop in the number of employees was unpopular, and was often disputed and resisted by the trade unions. The new HT's management dealt with this dissatisfaction with a generous severance pay plan, and by providing training and in-house assistance for job search for laid-off workers. In contrast, HT Mobile (a separate entity within the T-HT Group), increased the number of employees by 3% in 2003-2009, but this did not alter the general downward trend in the number of employees in the company as a whole. The study (of Čučković, *et al* (2011)) also found that HT's earnings ratio, profit margin improved significantly initially but later they deteriorated due to world economic crisis, stringent competition and pressures related to regulations and fiscal policies. They also found that post-privatisation investment rate in infrastructure and other long-term capital assets increased.

Croatian privatisation of gas sub-sector commenced on 2002. Čučković, *et al* (2011) also found that after being privatized to Hungarian oil company MOL, the Croatian gas company INA's revenues almost doubled. However, the company could achieve higher revenue increases in case the tight price increase restrictions imposed by the Croatian Energy Regulatory agency (CENA) and central government were not there. Regarding post-privatisation level, INA maintained employment level at around 16,000 (from 2002 to 2008) until 2010 when the company announced restructuring and employment reduction by 9%. This suggests that there was a small influence on employment levels after privatisation. However, the maintenance of employment levels was due to a clause in the Privatisation Agreement with MOL which required INA not to lay workers off within a five-year period after privatisation. Čučković, *et al* (2011) also found that post-privatisation labour productivity improved even without layoffs. In this regard revenue per employee doubled in 2004 - 2008 from €118,999 to €225,950, declining only in 2009 to €170,265 per employee as a result of global economic crisis. Čučković, *et al* (2011) points out that INA together with its Italian partners made significant post-privatisation investments in the modernization of refineries in Rijeka and Sisak, especially in 2008 - 2009. This significant investment in long-term assets led to post-privatisation improvement of sales to long-term assets from 11% in 2007 to 20.2% in 2009. However, Čučković, *et al* (2011) found that the investment in long-term assets could be higher than that

level if MOL was initially given majority shares in INA and if the government did not impose price restrictions on oil and gas. The government price restrictions led to low profit levels necessitating the investments in long-term assets to be made from borrowed funds rather than re-invested funds from retained earnings leading to a steep surge in the debt/equity ratio. Earnings and earnings to net sales also fell in 2008 and recovered slightly in 2009 and more significantly in 2010 (for earnings) and significantly (for earnings to net sales) in 2009, Čučković, *et al* (2011). The initial INA's disappointing post-privatisation results were caused by factors such as government price restrictions, poor corporate governance (with management and supervisory board members appointed by government on political basis).

2.3. Other previous Empirical Findings on Privatisation

Other previous empirical findings on privatisation were documented by various researchers. They include (Earle and Shpak, 2019; Estrin and Pelletier (2018); Redda, 2007; etc.). Extant documented empirical evidence shows that privatisation alone does not automatically improve operating and financial performance of a privatised firm. Various authors have studied the conditions driving the performance of a firm after being privatised. They include Radić *et al* (2021), Earle and Shpak (2019), Estrin and Pelletier (2018), Čučković, *et al* (2011), Redda (2007) and Megginson, *et al* (2006).

According to Estrin and Pelletier (2018) and Čučković, *et al* (2011), Radić *et al* (2021), for privatisation to work (i.e., produce positive results) it should be associated with robust regulatory infrastructure and appropriate process of privatization. These include well-designed and sequenced reforms; the implementation of complementary policies; the creation of regulatory capacity; attention to poverty and social impacts; and strong public communication.

For post-privatisation financial and operating performance of a SOE to improve, firms should be subjected to competition (Earle and Shpak, 2019; and Estrin and Pelletier, 2018), good candidates be chosen (Radić *et al*, 2021), good privatisation process be used (Radić *et al*, 2021), business environment should be improved (Earle and Shpak, 2019) and quality and stable regulatory institutions should be put in place (Radić *et al*, 2021). They pointed out that privatisation that leads to private monopoly results into worse performance than that before privatisation (Earle and Shpak, 2019; and Estrin and Pelletier, 2018; Radić *et al*, 2021).

Čučković *et al* (2011) points out that privatization of monopolistic SOEs assisted the introduction competition by allowing the entry of new firms (through rules and regulation) to the telecommunication market that had previously been dominated by state monopoly. As a result of privatization, quantity and quality of services improved, transparency of consumers' rights for timely and correct information about services was enhanced, inland calls on fixed telephone lines prices (which were underpriced through subsidies) increased and foreign calls, internet access and other services prices (which were overpriced) decreased after privatisation. Post-privatisation prices reflect underlying operating costs, investment costs, competition level and benefits to consumers. Ultimate result of privatization led to both improved profitability to telecommunication service providers and improved customer satisfaction in Croatia.

According to Redda (2007) for a privatised firm's operating and financial performance to improve the following factors should exist: (a) which firms are privatized; there can be a positive (or negative) selection effect; (b) whether privatization is total or partial; evidence suggests that the former is more beneficial; (c) the regulatory framework, which in turn depends on the institutional and political environment; (d) the characteristics of the new owners; foreign ownership has been associated with superior post-privatization business performance, especially relative to "insider" ownership (privatization to managers and workers) and (e) effective competition. Redda (2007) pointed out that competition had been found to be critical in bringing about improvements in company performance because it is associated with lower costs, lower prices, and higher operating efficiency.

Bachiller (2017) applied a meta-analysis of 60 empirical studies of privatised firms. The aim was to evaluate whether different post-privatisation results stem from the method of privatisation and the level of development of a country in which privatised firm existed. She found that firms privatised using public offerings perform

better after privatisation than those privatised using other methods such as voucher privatisation and private sale. The study also refuted the common-place assumption that privatisation in developing countries does not improve financial performance.

Waigama (2008) studied implementation of privatisation process and valuation methodology of privatised SOEs in Tanzania in order to assist the Presidential Parastatal Sector Reform Commission (PSRC) in decision-making. The study traced five interrelated aspects of privatisation, namely strategy formulation, valuation method, valuation error, assessment of buyer of SOEs and post-privatisation developments. The study attempted to find out whether or not the five aspects proceeded in the way to attain the privatisation stated objectives. The study found that PSRC's privatisation strategy did not promote higher competition, higher prices and higher government revenue; valuation methodology applied by valuation consultants did not improve certainty in determination of reserve price, and valuation estimates were not good proxies of sale prices; wider ownership participation by people was not achieved and follow up on ownership changes and post-privatisation development was lacking (Waigama, 2008). The study also found that for privatisation process and valuation methodology to produce intended results the market system and its institutions should be well developed and function well. These were lacking in privatisation process and valuation methodology in Tanzania (Waigama, 2008).

Kaare (2002) studied the impact of privatisation of solid waste collection services in Dar es Salaam, Tanzania and found that the privatisation had minimal impact in refuse collection services to low-income households. Mongula (2002), carried out a qualitative study of privatised firms in Tanzania and found that post-privatisation performance for some firms improved while for some other firms did not improve. The firms with improved post-privatisation performance were Tanzania Breweries Ltd., Tanzania Distilleries, Darbrew Ltd., Tanzania Cables, Tanzania Cigarettes Co., Tanzania Portland Cement Co., Tanga and Mbeya Cement factories, National Bank of Commerce (1997) Ltd., ABB Tanelec (electrical equipment manufacturers), Morogoro Canvas, Sabuni (Foma) Detergents, Kibo Paper Industry, DAHACO and Cam and Metal Box and Mtibwa, Kilombero and TPC sugar factories. Post-privatisation improvement involved tax payments, increase in production, acquisition of new technology and managerial skills, and levels of salaries. The firms whose post-privatisation performance did not improve included Tanzania Shoe Company and Pollysacks Ltd, Ubungo Spinning (has been closed since March 2002), Burns and Blane, National Bicycle Company (NABICO), Tanganyika Dyeing and Weaving Mill (Sungura Textile), Tanzania Pharmaceuticals Co., HANDICO and Blankets and Textiles Manufacturers. Mongula (2002) provided some reasons for improvement (or otherwise) of the firms: privatisation process, history of the privatised firms before privatisation, post-privatisation governance and management and decision-making, financial constraints of post-privatisation owners, organised resistance by employees (related to post-privatisation salary levels and working environment/ standards). The study by Mongula (2002) involved multi-sector firms and was narrative in nature without the use of any data analysis tool. Thus, even for firms that portrayed post-privatisation improvements the study did not provide any evidence whether the improvement was significant or not.

Kisenge (2013) conducted a qualitative study on the impact of privatising the National Bank of Commerce (NBC) of Tanzania and found that the bank's post-privatisation improved in terms of the volume of loans provided, job creation, increase number of branches which brought services near citizen, new technologies which facilitate the use of bank services without being in the bank premises (for example the use ATM machine, internet banking), online payment services (such as *LUKU*, telephone credits and payroll processing service).

The hitherto studies conducted in Tanzania did not relate to financial and operating performance metrics and methodology used in the current study. This provided the gap that the author attempted to plug. Therefore, this study focuses to plug the gap by evaluating the effect of privatisation on financial and operating performance of Tanzania Breweries Ltd.

Post-privatised TBL is not a monopolist firm, it is regulated by Dar es Salaam Stock Exchange (DSE) and Registrar of Companies and other government regulatory institutions such as Fair Competition Commission (FCC), and good business environment therefore it is predicted that its post-privatisation results to reflect

improved financial and operating results. The empirical TBL's pre- and post-privatisation financial and operating results are presented and discussed in section 4.0 of this paper.

3. Data and Methodology

“If you do not have patience, you cannot make beer.”
(Namibia, Ovambo tribe African Proverb)

3.1. Introduction

This section provides research design, data and data analysis and hypothesis tested.

3.2. Research Design

This study has used descriptive research design that is useful for a study involving both quantitative and qualitative approaches. The design provides descriptive data such as minimum values, maximum values, means, variances, standard deviation, correlation, t-statistics, p-values and critical values. In this study the descriptive research design has been used to describe the effect of privatisation on financial and operating performance of TBL, and test a variety of hypotheses on whether privatisation results into improvement of financial and operating performance. The study is confirmatory because it attempts to test hypotheses that privatisation improves financial and operating performance of SOEs as documented in previous studies. It is carried out to support or refute the hypotheses. Specifically, it tests the hypotheses that profitability, operating efficiency, capital expenditure, output, dividend payout and earnings per share of TBL improved (increased) and financial leverage and employment improved (decreased) after privatisation.

3.3. Data and Data Analysis

Data collected and used in the study were sales revenue, profit after tax, total assets, total equity, number of employees, capital expenditure, output (in hectolitres of beer produced), total debt, dividend paid, number of shares issued and earnings per share.

Data for the study were mainly collected from TBL Annual Reports from the year 1985 to 1992 (pre-privatisation period), that is year -8 to -1 and 1994 to 2001 (post-privatisation period), that is year +1 to +8. Some data were also obtained from the internet, for example from World Bank reports. Year of privatisation 1993, defined as Year 0 is excluded from calculating the pre- and post-privatisation means and mean differences.

Table 3.1 shows proxies used and analysed for profitability, operating efficiency, capital expenditure, output, financial leverage, employment level, dividend payout and earnings. Proxies for profitability are return on sales (ROS) ratio, return on assets (ROA) ratio and return on equity (ROE) ratio. Proxies for operating efficiency are sales efficiency (SALEFF) and net income efficiency (NIEFF). Capital expenditure to sales (CESA) and capital expenditure to assets (CETA) are used as proxies for capital expenditure. Proxies for output are units produced (in hectolitres) (PROD) and real sales (RESA). Financial leverage is proxied by debt to assets (TDTA) ratio and debt to equity (TDTE) ratio. The proxy for employment level is the number of employees (EMPL) whereas proxies for dividend payout are dividend to sales (DIVSAL) and dividend per share (DPS). Earnings are proxied by earning per share (EPS).

In order to test the predicted changes indicated in tables 3.1 and 3.2, the study used the t-test Paired Two Sample for Means available in Data Analysis Tool of Ms Excel. This was used to test whether mean differences between pre- and post-privatisation were zero.

Regarding real sales calculations, nominal sales (in TZS M) were adjusted for inflation by using the following formula, as also applied by Kenton (2022):

$$\text{Real Sales} = \text{Nominal Sales} \times \frac{\text{CPI}_{\text{Reference year}}}{\text{CPI}_{\text{Year}}}$$

$$CPI_{\text{Base year}}$$

Where:

Real Sales=Inflation-adjusted sales

$CPI_{\text{Reference year}}$ = A consumer price index for a reference year

$CPI_{\text{Base year}}$ = A consumer price index for a base year

After calculating means and differences of means for each variable, p-values are used to test whether the changes in financial and operating performance indicators are statistically significant. In other words, the test is carried out to determine whether the difference averages between pre- and post-privatisation samples are zero.

The t-test Paired Two Sample for Means data analysis was carried out using Microsoft Excel Data Analysis Tool. The tool is used because it is useful when: (i) testing two measurements on the same company or companies, (ii) two sample sizes are equal, (iii) sample sizes are small (i.e., less than 30 items), (iv) sample observations are not completely independent but their dependent in pairs, and (v) simple random sampling is used, Sancheti and Kapoor (2007). The technique is applicable, for example when a company or a government institutes a policy/ intervention to improve performance of a company or companies and an analysis is required to assess whether the policy/ intervention worked effectively. All the mentioned conditions for the use of the method/ technique were present for the case in hand, that is TBL.

Regarding hypothesis testing, null hypothesis was formulated as, H_0 : There is no difference between pre- and post-privatisation performance indicator (difference of means) and alternative hypothesis was formulated as, H_A : There is an increase or decrease in post-privatisation performance indicator (difference of means). The hypotheses to be tested are shown in table 3.2. The aim is to reject the null hypothesis in case the post-privatisation improvement is statistically significant, that is if the p-value is less than significance level used. The significance level used in this case is 0.05.

3.4. Hypotheses Tested

This section presents all hypotheses tested in this study. Table 3.2 shows these hypotheses. Generally, the hypotheses test whether TBL's privatisation improved financial and operating performance. The hypotheses are presented here below:

3.4.1. Hypotheses on Profitability

(a) Privatisation had no effect on return on sales (ROS)

$$H_0: ROS_{\text{Pre}} - ROS_{\text{Post}} = 0$$

$$H_A: ROS_{\text{Pre}} - ROS_{\text{Post}} < 0$$

A null hypothesis (H_0) stated that the difference (change) between pre-privatisation ROS and post-privatisation ROS is zero. In other words, the null hypothesis stated that privatisation did not affect ROS. The alternative hypothesis (H_A) stated that privatisation improves (increases) ROS.

(b) Privatisation had no effect on return on assets (ROA)

$$H_0: ROA_{\text{Pre}} - ROA_{\text{Post}} = 0$$

$$H_A: ROA_{\text{Pre}} - ROA_{\text{Post}} < 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation ROA and post-privatisation ROA is zero. In other words, the null hypothesis stated that privatisation did not affect ROA. The alternative hypothesis (H_A) stated that privatisation improves (increases) ROA.

(c) Privatisation had no effect on return on equity (ROE)

$$H_0: ROE_{\text{Pre}} - ROE_{\text{Post}} = 0$$

$$H_A: \text{ROE}_{\text{Pre}} - \text{ROE}_{\text{Post}} < 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation ROE and post-privatisation ROE is zero. In other words, the null hypothesis stated that privatisation did not affect ROE. The alternative hypothesis (H_A) stated that privatisation results into improvement of ROE (increasing ROE).

3.4.2. Hypotheses on Operating Efficiency

(a) Privatisation had no effect on sales efficiency (SALEFF)

$$H_0: \text{SALEFF}_{\text{Pre}} - \text{SALEFF}_{\text{Post}} = 0$$

$$H_A: \text{SALEFF}_{\text{Pre}} - \text{SALEFF}_{\text{Post}} < 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation SALEFF and post-privatisation SALEFF is zero. In other words, null hypothesis stated that privatisation did not affect SALEFF. The alternative hypothesis (H_A) suggested that privatisation improves (increases) SALEFF.

(b) Privatisation had no effect on net income efficiency (NIEFF)

$$H_0: \text{NIEFF}_{\text{Pre}} - \text{NIEFF}_{\text{Post}} = 0$$

$$H_A: \text{NIEFF}_{\text{Pre}} - \text{NIEFF}_{\text{Post}} < 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation NIEFF and post-privatisation NIEFF is zero. In other words, null hypothesis stated that privatisation did not affect NIEFF. The alternative hypothesis (H_A) suggested that privatisation improves (increases) NIEFF.

3.4.3. Hypotheses on Capital Expenditure

(a) Privatisation had no effect on capital expenditure to sales ratio (CESA)

$$H_0: \text{CESA}_{\text{Pre}} - \text{CESA}_{\text{Post}} = 0$$

$$H_A: \text{CESA}_{\text{Pre}} - \text{CESA}_{\text{Post}} < 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation CESA and post-privatisation CESA is zero. This is to say, the null hypothesis stated that privatisation did not affect CESA. The alternative hypothesis (H_A) suggested that privatisation improves (increases) CESA.

(b) Privatisation had no effect on capital expenditure to assets (CETA) ratio

$$H_0: \text{CETA}_{\text{Pre}} - \text{CETA}_{\text{Post}} = 0$$

$$H_A: \text{CETA}_{\text{Pre}} - \text{CETA}_{\text{Post}} < 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation CETA and post-privatisation CETA is zero. In other words, null hypothesis proposes that privatisation did not affect CETA. The alternative hypothesis (H_A) stated that privatisation improves (increases) CETA.

3.4.4. Hypotheses on Output

(a) Privatisation had no effect on units produced in hectolitres (PROD)

$$H_0: \text{PROD}_{\text{Pre}} - \text{PROD}_{\text{Post}} = 0$$

$$H_A: \text{PROD}_{\text{Pre}} - \text{PROD}_{\text{Post}} < 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation PROD and post-privatisation PROD is zero. This is to say, null hypothesis stated that privatisation did not affect PROD. The alternative hypothesis (H_A) suggested that privatisation improves (increases) PROD.

(b) Privatisation had no effect on real sales (RESA)

$$H_0: \text{RESA}_{\text{Pre}} - \text{RESA}_{\text{Post}} = 0$$

$$H_A: \text{RESA}_{\text{Pre}} - \text{RESA}_{\text{Post}} < 0$$

Null hypothesis (H_0) proposes that the difference between pre-privatisation RESA and post-privatisation RESA is zero. In other words, null hypothesis proposes that privatisation did not affect RESA. Alternative hypothesis (H_A) suggested that privatisation improves (increases) sales in real terms (RESA).

3.4.5. Hypotheses on Financial Leverage

(a) Privatisation had no effect on debt to assets (TDTA) ratio

$$H_0: \text{TDTA}_{\text{Pre}} - \text{TDTA}_{\text{Post}} = 0$$

$$H_A: \text{TDTA}_{\text{Pre}} - \text{TDTA}_{\text{Post}} > 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation TDTA and post-privatisation TDTA is zero. In other words, the null hypothesis stated that privatisation did not affect TDTA. The alternative hypothesis (H_A) predicted that privatisation improves (decreases) TDTA.

(b) Privatisation had no effect on debt-to-equity ratio (TDTE)

$$H_0: \text{TDTE}_{\text{Pre}} - \text{TDTE}_{\text{Post}} = 0$$

$$H_A: \text{TDTE}_{\text{Pre}} - \text{TDTE}_{\text{Post}} > 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation TDTE and post-privatisation TDTE is zero. This is to say, the null hypothesis stated that privatisation did not affect TDTE. The alternative hypothesis (H_A) stated that privatisation improves (decreases) TDTE.

3.4.6. Hypothesis on Employment Level

(a) Privatisation had no effect on the number of employees (EMPL)

$$H_0: \text{EMPL}_{\text{Pre}} - \text{EMPL}_{\text{Post}} = 0$$

$$H_A: \text{EMPL}_{\text{Pre}} - \text{EMPL}_{\text{Post}} > 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation EMPL and post-privatisation EMPL is zero. This null hypothesis said that privatisation did not affect the number of employees. The alternative hypothesis (H_A) said that privatisation resulted into decrease in the number of employees.

3.4.7. Hypotheses on Dividend Payout

(a) Privatisation had no effect on the dividend to sales ratio (DIVSAL)

$$H_0: \text{DIVSAL}_{\text{Pre}} - \text{DIVSAL}_{\text{Post}} = 0$$

$$H_A: \text{DIVSAL}_{\text{Pre}} - \text{DIVSAL}_{\text{Post}} < 0$$

A null hypothesis (H_0) indicated that the difference between pre-privatisation DIVSAL and post-privatisation DIVSAL was zero. In other words, the null hypothesis said that privatisation did not affect the DIVSAL. The alternative hypothesis (H_A) said that privatisation resulted into improvement (increase) of DIVSAL.

(b) Privatisation had no effect on the dividend per share (DPS)

$$H_0: \text{DPS}_{\text{Pre}} - \text{DPS}_{\text{Post}} = 0$$

$$H_A: \text{DPS}_{\text{Pre}} - \text{DPS}_{\text{Post}} < 0$$

A null hypothesis (H_0) said that the difference between pre-privatisation DPS and post-privatisation DPS was zero. The null hypothesis indicated that privatisation did not affect the DPS. The alternative hypothesis (H_A) stated that privatisation resulted into improvement (increase) of DPS.

3.4.8. Hypothesis on Earnings

(a) Privatisation had no effect on the earnings per share (EPS)

$$H_0: \text{EPS}_{\text{Pre}} - \text{EPS}_{\text{Post}} = 0$$

$$H_A: \text{EPS}_{\text{Pre}} - \text{EPS}_{\text{Post}} < 0$$

A null hypothesis (H_0) stated that the difference between pre-privatisation EPS and post-privatisation EPS was zero. The null hypothesis said that privatisation did not affect the EPS. The alternative hypothesis (H_A) said that privatisation resulted into improvement (increase) of EPS.

4. Research Results: TBL's Pre- versus Post-Privatisation Financial and Operating Performance

"The new moon cannot come until the other has gone"

(Bahunde or Hunde, Democratic Republic of Congo Proverb)

4.1. Introduction

The results of the study are presented and analysed in this section. As already mentioned in section 3.0 of this paper, *t*-test Paired Two Sample for Means was carried out to determine whether privatisation of TBL improved its financial and operating performance. Tables 3.1 and 3.2 indicate performance metrics used to assess the effect of privatisation. The metrics fall under the following categories: profitability, efficiency, capital expenditure, output, financial leverage, employment, dividend payout and earnings.

Table 3.1: Performance Metrics, Definitions and Predicted Changes

	Performance Metrics	Definitions	Predicted Change after Privatisation
1.	Profitability		
(i)	Return on Sales (ROS)	Profit after tax/Total sales revenue	Increase, i.e. $\text{ROS}_{\text{Pre}} < \text{ROS}_{\text{Post}}$
(ii)	Return on Assets (ROA)	Profit after tax/Total assets	Increase, i.e. $\text{ROA}_{\text{Pre}} < \text{ROA}_{\text{Post}}$
(iii)	Return on Equity (ROE)	Profit after tax/Total equity	Increase, i.e. $\text{ROE}_{\text{Pre}} < \text{ROE}_{\text{Post}}$
2.	Operating Efficiency		
(i)	Sales Efficiency (SALEFF)	Total sales revenue/Number of employees	Increase, i.e. $\text{SALEFF}_{\text{Pre}} < \text{SALEFF}_{\text{Post}}$
(ii)	Net Income Efficiency (NIEFF)	Profit after tax/Number of employees	Increase, i.e. $\text{NIEFF}_{\text{Pre}} < \text{NIEFF}_{\text{Post}}$
3.	Capital Expenditure		
(i)	Capital Expenditure to Sales (CESA)	Capital expenditure /Total sales revenue	Increase, i.e. $\text{CESA}_{\text{Pre}} < \text{CESA}_{\text{Post}}$
(ii)	Capital Expenditure to Assets (CETA)	Capital expenditure/Total assets	Increase, i.e. $\text{CETA}_{\text{Pre}} < \text{CETA}_{\text{Post}}$
4.	Output		
(i)	Units produced in hectolitres (PROD)	Total hectolitres of beer produced	Increase, i.e. $\text{PROD}_{\text{Pre}} < \text{PROD}_{\text{Post}}$
(ii)	Real Sales (RESA)	Nominal Sales $\times \frac{\text{CPI}_{\text{Reference year}}}{\text{CPI}_{\text{Base year}}}$	Increase, i.e. $\text{RESA}_{\text{Pre}} < \text{RESA}_{\text{Post}}$
5.	Financial Leverage		
(i)	Debt to Assets (TDTA)	Total debt/Total assets	Decrease, i.e. $\text{TDTA}_{\text{Pre}} > \text{TDTA}_{\text{Post}}$
(ii)	Debt to Equity (TDTE)	Total debt/ Total equity	Decrease, i.e., $\text{TDTE}_{\text{Pre}} > \text{TDTE}_{\text{Post}}$
6.	Employment		
(i)	Number of Employees (EMPL)	Number of employees	Decrease, i.e. $\text{EMPL}_{\text{Pre}} > \text{EMPL}_{\text{Post}}$
7.	Dividend Payout		
(i)	Dividends to Sales (DIVSAL)	Dividends/Total sales revenue	Increase, i.e., $\text{DIVSAL}_{\text{Pre}} < \text{DIVSAL}_{\text{Post}}$
(ii)	Dividend Per Share (DPS)	Dividends/ No. of issued ordinary shares	Increase, i.e., $\text{DPS}_{\text{Pre}} < \text{DPS}_{\text{Post}}$
8.	Earnings		
(i)	Earnings per share (EPS)	Profit (Loss) after tax/No. of issued ordinary shares	Increase, i.e., $\text{EPS}_{\text{Pre}} < \text{EPS}_{\text{Post}}$

Source: Author's formulation

Key for table 3.1 above:

ROS _{Pre}	stands for return on sales before privatisation
ROS _{Post}	stands for return on sales after privatisation
ROA _{Pre}	stands for return on assets before privatisation
ROA _{Post}	stands for return on assets after privatisation
ROE _{Pre}	stands for return on equity before privatisation
ROE _{Post}	stands for return on equity after privatisation
SALEFF _{Pre}	stands for sales efficiency before privatization
SALEFF _{Post}	stands for sales efficiency after privatization
NIEFF _{Pre}	stands for net income efficiency before privatization
NIEFF _{Post}	stands for net income efficiency after privatization
CESA _{Pre}	stands for capital expenditure to sales before privatisation
CESA _{Post}	stands for capital expenditure to sales after privatization
CETA _{Pre}	stands for capital expenditure to assets before privatisation
CETA _{Post}	stands for capital expenditure to assets after privatisation
PROD _{Pre}	stands for production output (in hectolitres) before privatisation
PROD _{Post}	stands for production output (in hectolitres) after privatisation
RESA _{Pre}	stands for real sales before privatisation
RESA _{Post}	stands for real sales after privatisation
TDTA _{Pre}	stands for total debt to assets before privatization
TDTA _{Post}	stands for total debt to assets after privatization
TDTE _{Pre}	stands for total debt to equity before privatization
TDTE _{Post}	stands for total debt to equity after privatization
EMPL _{Pre}	stands for number of employees before privatisation
EMPL _{Post}	stands for number of employees after privatisation
DIVSAL _{Pre}	stands for dividend to sales before privatization
DIVSAL _{Post}	stands for dividend to sales after privatization
DPS _{Pre}	stands for dividend per share before privatization
DPS _{Post}	stands for dividend per share after privatization
EPS _{Pre}	stands for earnings per share

Table 3.2: Predicted Change and Hypotheses tested

	Performance Metrics	Predicted Change after Privatisation	Difference	Hypotheses tested
1.	Profitability			
	Return on Sales (ROS)	Increase, i.e., ROS _{Pre} < ROS _{Post}	ROS _{Pre} - ROS _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
	Return on Assets (ROA)	Increase, i.e., ROA _{Pre} < ROA _{Post}	ROA _{Pre} - ROA _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
	Return on Equity (ROE)	Increase, i.e., ROE _{Pre} < ROE _{Post}	ROE _{Pre} - ROE _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
2.	Operating Efficiency			
	Sales Efficiency (SALEFF)	Increase, i.e., SALEFF _{Pre} < SALEFF _{Post}	SALEFF _{Pre} - SALEFF _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
	Net Income Efficiency (NIEFF)	Increase, i.e., NIEFF _{Pre} < NIEFF _{Post}	NIEFF _{Pre} - NIEFF _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
3.	Capital Expenditure			
	Capital Expenditure to Sales (CESA)	Increase, i.e., CESA _{Pre} < CESA _{Post}	CESA _{Pre} - CESA _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
	Capital Expenditure to Assets (CETA)	Increase, i.e., CETA _{Pre} < CETA _{Post}	CETA _{Pre} - CETA _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
4.	Output			
	Units produced in hectolitres (PROD)	Increase, i.e., PROD _{Pre} < PROD _{Post}	PROD _{Pre} - PROD _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
	Real Sales (RESA)	Increase, i.e., RESA _{Pre} < RESA _{Post}	RESA _{Pre} - RESA _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
5.	Financial Leverage			
	Debt to Assets (TDTA)	Decrease, i.e., TDTA _{Pre} > TDTA _{Post}	TDTA _{Pre} - TDTA _{Post}	H ₀ : Difference = 0 H _A : Difference < 0
	Debt to Equity (TDTE)	Decrease, i.e., DTE _{Pre} > DTE _{Post}	TDTE _{Pre} - TDTE _{Post}	H ₀ : Difference = 0 H _A : Difference < 0
6.	Employment			
	Number of Employees (EMPL)	Decrease, i.e. EMPL _{Pre} > EMPL _{Post}	EMPL _{Pre} - EMPL _{Post}	H ₀ : Difference = 0 H _A : Difference < 0
7.	Dividend Payout			
	Dividends to Sales (DIVSAL)	Increase, i.e., DIVSAL _{Pre} < DIVSAL _{Post}	DIVSAL _{Pre} - DIVSAL _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
	Dividend per Share (DPS)	Increase, i.e., DPS _{Pre} < DPS _{Post}	DPS _{Pre} - DPS _{Post}	H ₀ : Difference = 0 H _A : Difference > 0
8.	Earnings			
	Earnings per share (EPS)	Increase, i.e.	EPS _{Pre} - EPS _{Post}	H ₀ : Difference = 0

		EPS _{Pre} < EPS _{Post}		H _A : Difference > 0
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Source: Author's formulation

Profitability metrics used are ROS, ROA and ROE. Efficiency metrics used are sales efficiency and net income efficiency. The capital expenditure metrics are capital expenditure to sales and capital expenditure to assets whereas output metrics gauged are units produced (in hectolitres) and real sales. The author gauged debt to assets and debt to equity as financial leverage metrics and number of employees as employment metrics. Dividends are measured in terms of dividend to sales and dividend per share whereas earnings are measured in terms of earnings per share.

4.2. Change in Profitability after Privatisation

Tables 4.1 and 4.2 show annual performance metrics for eight years prior to privatisation and eight years after privatisation of TBL. The minimum pre-privatisation ROS stood at -223.06% whereas the minimum post-privatisation ROS was -4.31%. The maximum pre-privatisation ROS was 5.85% whereas the maximum post-privatisation ROS was 28.51%. The average pre-privatisation ROS was -118.80% and the average post-privatisation ROS stood at 15.05% (refer to table 4.2). With *t*-stat of -3.995847748, *t*-critical value (one-tail) of 1.894578605 and *p*-value (one-tail) of 0.002608712 (which is less than significance level of 0.05) (refer to table 4.2), null hypothesis is rejected. This means that difference between the pre-privatisation average ROS and the post-privatisation average ROS (increase) is statistically significant. In other words, privatisation of TBL had significant positive impact on return on sales.

Table 4.1: TBL's Pre- and Post-Privatisation Financial and Operating Performance Metrics

Performance Metrics	1985	1986	1987	1988	1989	1990	1991	1992	1994	1995	1996	1997	1998	1999	2000	2001
Profitability																
ROS (%)	-223.06	-238.87	-161.04	-211.19	-1.24	-78.3	5.85	-42.54	-4.31	12.88	13.49	11.97	14.6	18.62	28.5	24.65
ROA (%)	-21.27	-18.72	-17.26	-23.55	-0.24	-14.59	1.41	-7.69	-3.99	21.73	30.38	20.99	22.56	25.32	31.33	27.23
ROE (%)	-42.72	-40.14	-33.73	(43.90)	-0.4	-22.83	2.24	-11.6	-5.54	30.2	43.13	39.71	44.83	47.79	46.19	35.03
Operating Efficiency																
SALEFF (TZS M)	0.392459 0	0.3369713 5	0.5478991 6	0.604225 352	1.149076 517	1.1628622 72	1.713624 67	1.91206 896	11.19034 74	25.16926 3	59.24048 33	73.073587 39	76.63857 80	91.116173 1	82.063636 3	87.65801 527
NIEFF (TZS M)	0.875409 84	- 0.8049113	0.8823529 4	1.2760 563	0.014248 02	0.9104898 6	0.100257 06	0.81344 827	0.482625 48	3.242989 47	7.992145 01	8.7495400 79	11.19124 4	16.966590 7	23.393181 8	21.61068 702
Capital Expenditure																
CESA (TZS M)	166.6666 66	162.34817 8	107.87321 06	113.9860 14	61.01033 295	47.419497 13	54.50045 00	74.9323 7151	27.70589 65	21.27741 43	9.112328 26	9.4580014 03	8.760973 766	15.2125	5.3958494 8	3.689738 052
CETA (TZS M)	15.89134 93	12.726118 7	11.564178 45	12.71120 354	11.89080 331	8.8350113 01	13.17736 67	13.5474 405	25.61403 50	26.37799 71	9.035369 77	16.577101 88	13.53550 1	16.129397 7	5.9297960 8	0.795444 708
Output																
PROD (Hectolitres)	520,545	531,127	530,475	529,955	495,355	435,347	469,523	453,548	575,000	875,000	1,221,307	1,450,000	1,500,000	1,535,700	1,551,000	1,545,000
RESA (TZS M)	39.78828 00	54.364700	111.88320 00	160.9608 00	411.2862 00	385.79806 0	729.9270	739.703 0	6,495.09 03	17,072.31 12	33,873.85 65	44,609.539 80	52,677.3 350	58,584.000	56,014.340 4	62,434.1 584
Financial Leverage																
TDTA (%)	79.24	0	0	45.49	40.83	24.4	21.25	17.72	17.14	0	9.27	15.45	10.96	8.21	8.05	10.75
TDTE (%)	159.17	0	0	84.79	67.84	38.18	33.63	26.73	23.83	0	13.16	29.24	21.77	15.50	11.87	13.84
Employment																
EMPL	3,050	3,665	3,570	3,550	3,790	3,899	3,890	2,900	2,590	2,375	1,655	1,522	1,519	1,317	1,320	1,310
Dividend																
DIVSAL (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.36	8.31	11.34	14.95	16.77	19.762010 27	21.98516 093
DPS (TZS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.37	37.72	58.36	73.75	85.27	90.729629 05	107.0005 239
Earnings																

EPS (TZS)	-12.36	-13.65	-14.58	-20.97	-0.25	-16.43	1.81	-10.92	-5.79	35.65	61.22	61.64	72.05	94.71	130.87574	28	119.99
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Source: TBL's Annual Reports and calculations therefrom

Table 4.2: TBL's Descriptive Statistics

	Performance Metrics	Minimum		Maximum		Mean		STDEV for Mean difference	Variance		Pearson Correlation	t Stat	P(T<=t) one-tail	P(T<=t) two-tail	t Critical one-tail	t Critical two-tail	
		Pre	Post	Pre	Post	Pre	Post		Pre	Post							
1	Profitability																
(i)	ROS (in %)	-223.06	-4.31	5.85	28.51	-118.80	15.05	98.23821	10345.6	96.8211752	0.732309724	3.995848	0.002608712	0.005217424	1.89457861	2.3646243	
(ii)	ROA (in %)	-23.55	-3.99	1.41	31.33	-12.74	21.94	20.51820	90.1918	124.613009	0.47919056	9.219744	0.000018227	0.000036453	1.89457861	2.3646243	
(iii)	ROE (in %)	-43.90	-5.54	2.24	47.79	-24.13	35.17	35.31687	357.355	305.778910	0.520637947	9.392346	0.000016146	0.000032293	1.89457861	2.3646243	
2	Efficiency																
(i)	SALEFF (in TZS M)	0.33697135	11.1903474	1.91206897	91.11617312	0.97739841	63.26876052	38.03666	0.3650767	882.62970	0.772171346	6.024493	0.000264596	0.000529193	1.89457861	2.3646243	
(ii)	NIEFF (in TZS M)	-	-0.4826254	0.100257069	23.39318182	0.68458244	11.58296911	8.597570	0.22468	72.1756074	0.432440716	4.179636	0.002069564	0.004139127	1.89457861	2.3646243	
3	Capital Expenditure																
(i)	CESA (in %)	47.42	3.69	166.67	27.71	98.59	100.61	55.15433	2222.4252	68.3390124	0.747751777	5.886878	0.000303739	0.000607478	1.89457861	2.3646243	
(ii)	CETA (in %)	8.84	0.80	15.89	26.38	12.54	14.25	6.338218	3.9738889	80.4472675	0.163568856	0.544491	0.3015040613	0.6030081225	1.89457861	2.3646243	
4	Output																
(i)	PROD (in Hectolitres)	435,347	575,000	531,127	1,551,000	495,734.38	1,281,626	478,308	1.48E+09	135,832,000,000	0.623227527	5.646297	0.0003887352	0.000777470	1.89457861	2.3646243	
(ii)	RESA (in TZS M)	39.79	6,495.09	739.70	62,434.16	329.21	41,470.08	25,464.27	81,980.13	422,225.251.77	0.832195486	5.729260	0.000356739	0.00071348	1.89457861	2.3646243	
5	Financial Leverage																
(i)	TDTA (%)	0.00	0.00	79.24	17.14	28.62	9.98	20.66337	689.353	27.10416709	0.82140091	2.376797	0.024556444	0.049112888	1.89457861	2.3646243	
(ii)	TDTE (%)	0.00	0.00	159.17	29.24	51.29	16.15	40.72436	2768.80	79.40997013	0.756347036	2.149144	0.034350194	0.068700388	1.89457861	2.3646243	
6	Employment																
(i)	EMPL	2,900	1,310	3,899	2,590	3,539	1,701	1,041	140,029	251,054	0.320765715	7.270817	8.34514E-05	0.000166903	1.89457861	2.3646243	
7	Dividend Payout																
(i)	DIVSAL (in %)	0.00	0.00	0.00	21.99	.00	12.56	8.16	0.00	52.63	No correl	4.896386	0.000880183	0.001760367	1.89457861	2.3646243	
(ii)	DPS (in TZS)	0.00	0.00	0.00	107.00	.00	59.15	39.70	0.00	1,377.87	No correl	4.507154	0.001387228	0.002774456	1.89457861	2.3646243	
8	Earnings																
(i)	EPS (in TZS)	-20.97	-5.79	1.81	130.88	-10.92	71.29	52.50	61.44	1982.29	0.40	-5.54	0.000436084	0.000872017	1.89457861	2.3646243	

Source: Author's calculations

Table 4.2 indicates that the pre-privatisation minimum ROA was -23.55% while the post-privatisation minimum ROA was -3.99%. Table 4.2 also indicates that the pre-privatisation maximum ROA was 1.41% whereas the post-privatisation maximum ROA was 31.33%. Table 4.2 shows that the average pre-privatisation ROA stood at -12.74% and the average post-privatisation ROA was 21.94%. The *t*-stat of -9.219744, *t*-critical value (one-tail) of 1.89457861 and the *p*-value (one-tail) of 0.000018227 (which is less than significance level of 0.05) (refer to table 4.2) provide strong evidence to reject the null hypothesis. This means that the difference between the average ROA prior to privatisation and the average ROA after privatisation (increase) is statistically significant. In other words, privatisation of TBL had significant positive effect on return on assets.

Table 4.2 indicates that the pre-privatisation minimum ROE was -43.90% and the post-privatisation minimum ROE was -5.54%. Table 4.2 also indicates that the pre-privatisation maximum ROE was 2.24% whereas the

post-privatisation maximum ROE was 47.79%. Table 4.2 shows that the average pre-privatisation ROE stood at -24.13% while the average post-privatisation ROE was 35.17%. Table 4.2 also shows the t -statistic of -9.392346, t -critical value (one-tail) of 1.89457861 and the p -value (one-tail) of 0.000016146 (which is less than the significance level of 0.05). These results provide strong evidence that TBL privatisation resulted into significant improvement (increase) in ROE. Therefore, null hypothesis is rejected on this basis because there is strong evidence to do so.

4.3. Change in Operating Efficiency after Privatisation

The minimum pre-privatisation sales per employee (SALEFF) was TZS 336,971.35 whereas the minimum post-privatisation SALEFF was TZS 11,190,347.49 (refer to Table 4.2). Table 4.2 also indicates that the pre-privatisation maximum SALEFF was TZS 1,912,068.97 whereas the post-privatisation maximum SALEFF was TZS 91,116,173.12. The pre-privatisation average SALEFF was TZS 977,398.41 whereas the post-privatisation average SALEFF was TZS 63,268,760.52 (refer to Table 4.2). With t -statistic of -6.024493, t -critical value (one-tail) of 1.89457861 and p -value (one-tail) of 0.000264596 (which is less than significance level of 0.05), there is strong evidence that difference between average SALEFF after privatisation is higher than that before privatisation. The null hypothesis is rejected. TBL privatisation resulted into significant improvement of sales efficiency.

Table 4.2 indicates that the pre-privatisation minimum net income per employee (NIEFF) was TZS -1,276,056.34 and the post-privatisation minimum NIEFF was TZS -482,625.48. The pre-privatisation maximum NIEFF was TZS 100,257.07 and post-privatisation maximum NIEFF was TZS 23,393,181.82 (Table 4.2). The average pre-privatisation NIEFF was TZS -684,582.44 while the average post-privatisation NIEFF was TZS 11,582,969.11 (Table 4.2). Table 4.2 also shows that t -statistic of -4.179636, t -critical value (one-tail) of 1.89457861 and p -value (one-tail) was 0.002069564 (which is less than significance level of 0.05). These statistics provide strong evidence to reject the null hypothesis. This means that the difference between average NIEFF before privatisation and average NIEFF after privatisation is statistically significant. Privatisation of TBL had significant positive effect on net income efficiency.

4.4. Change in Capital Expenditure after Privatisation

The minimum pre-privatisation capital expenditure to sales (CESA) was 47.42% whereas the minimum post-privatisation CESA was 3.69% (refer to Table 4.2). Table 4.2 also shows that the pre-privatisation maximum CESA was 166.67% while the post-privatisation maximum CESA was 27.71%. The pre-privatisation average CESA was 98.59% whereas the post-privatisation average CESA was 100.61% (refer to Table 4.2). The t -statistic of 5.8868780, t -critical value (one-tail) of 1.89457861 and the p -value (one-tail) of 0.000303739 (which is less than significance level of 0.05) provide strong evidence that the difference between average post-privatisation CESA is higher than the average pre-privatisation CESA. Thus, null hypothesis is rejected. TBL privatisation resulted into significant improvement (increase) of capital expenditure.

The minimum pre-privatisation capital expenditure to assets (CETA) was 8.84% whereas the minimum post-privatisation CETA was 0.80% (refer to Table 4.2). Table 4.2 also shows that the pre-privatisation maximum CETA was 15.89% whereas the post-privatisation maximum CETA was 26.38%. The pre-privatisation average CETA was 12.54% whereas the post-privatisation average CETA was 14.25% (refer to Table 4.2). The t -statistic of -0.544491, t -critical value (on-tail) of 1.89457861 and the p -value (one-tail) of 0.3015040613 is higher than the significance level of 0.05. These statistics provide weak evidence that an increase in average CETA resulted from TBL's privatisation. Null hypothesis is not rejected on this basis.

4.5. Change in Output after Privatisation

Table 4.2 indicates that the pre-privatisation minimum units produced (in hectolitres) (PROD) was 435,347 hectolitres whereas the post-privatisation minimum PROD was 575,000 hectolitres. The pre-privatisation maximum PROD was 531,127 hectolitres whereas post-privatisation maximum PROD was 1,551,000 hectolitres (refer to Table 4.2). The average pre-privatisation PROD was 495,734.38 hectolitres while the average post-

privatisation PROD was 1,281,626 hectolitres (refer to Table 4.2). Table 4.2 shows that t -statistic was -5.646297, t -critical value (one tail) was 1.89457861 and p -value (one-tail) was 0.0003887352 (which is less than the significance level of 0.05). These statistics provide strong evidence that the difference between average PROD before privatisation and average PROD after privatisation (increase) is statistically significant. Thus, null hypothesis is rejected because there is strong evidence to do so. In other words, privatisation of TBL had significant improvement on production.

The minimum pre-privatisation real sales revenue (RESA) was TZS 39,788,280 whereas the minimum post-privatisation RESA was TZS 6,495,090,300 (refer to Table 4.2). Table 4.2 also shows that pre-privatisation maximum RESA was TZS 739,703,000 while post-privatisation maximum RESA was TZS 62,434,158,400. The pre-privatisation average RESA was TZS 329,213,905 whereas the post-privatisation average RESA was TZS 41,470,078,950 (Table 4.2). The t -statistic of -5.729260, t -critical value (one tail) of 1.89457861 and p -value (one-tail) of 0.000356739 (which is less than significance level of 0.05) provide strong evidence that sales in real terms improved (increased) significantly after privatisation. Thus, null hypothesis is rejected.

4.6. Change in Financial Leverage after Privatisation

Table 4.2 indicates that the pre-privatisation minimum debt to assets (TDTA) ratio was 0.00% and the post-privatisation minimum TDTA was 0.00%. The pre-privatisation maximum TDTA was 79.24% and the post-privatisation maximum TDTA was 17.14% (see table 4.2). The average pre-privatisation TDTA was 28.62% and the average post-privatisation TDTA was 9.98% (see table 4.2). Table 4.2 shows that the t -statistic was 2.376797, t -critical value (one tail) was 1.89457861 and p -value (one-tail) was 0.024556444 (i.e., less than the significance level of 0.05). The statistics show strong evidence that privatisation resulted to significant improvement (decline) in debt to asset ratio. Therefore, null hypothesis is rejected on this basis.

Table 4.2 indicates that the pre-privatisation minimum debt to equity (TDTE) ratio was 0.00% and the post-privatisation minimum TDTE was 0.00%. The pre-privatisation maximum TDTE was 159.17% and the post-privatisation maximum TDTE was 29.24% (see table 4.2). The average pre-privatisation TDTE was 51.29% and the average post-privatisation TDTE was 16.15% (see table 4.2). With t -statistic of 2.149144, t -critical value (one tail) of 1.89457861 and p -value (one-tail) of 0.034350194 (which is less than the significance level of 0.05), there is strong evidence to show that privatisation of TBL resulted into statistically significant improvement (decline) in debt-to-equity ratio. Thus, null hypothesis is rejected.

4.7. Change in Level of Employment after Privatisation

The minimum pre-privatisation employment level (in terms of number of employees) (EMPL) was 2,900 employees whereas the minimum post-privatisation EMPL was 1,310 employees (refer to table 4.2). Table 4.2 also shows that the pre-privatisation maximum EMPL was 3,899 employees and the post-privatisation maximum EMPL was 2,590 employees. The pre-privatisation average EMPL was 3,539 employees and the post-privatisation average EMPL was 1,701 employees (refer to table 4.2). With t -statistic of 7.270817, t -critical value (one tail) of 1.89457861 and p -value (one-tail) of 0.0000834514354 (i.e., less than the significance level of 0.05), there is strong evidence that employment level declined significantly after TBL's privatisation move. The null hypothesis that the change in EMPL is zero is rejected on this basis.

4.8. Change in Dividend Payout after Privatisation

Table 4.2 indicates that the pre-privatisation minimum dividend to sales (DIVSAL) ratio was 0.00% and the post-privatisation minimum DIVSAL was 0.00%. The pre-privatisation maximum DIVSAL was 0.00% and the post-privatisation maximum DIVSAL was 21.99% (refer table 4.2). The average pre-privatisation DIVSAL was 0.00% and the average post-privatisation DIVSAL was 12.56% (see table 4.2). Table 4.2 also shows that t -

statistic was -4.896386, t-critical value (one tail) was 1.89457861 and p-value (one-tail) was 0.000880183 (i.e., less than the significance level of 0.05). The data show that privatisation of TBL resulted into statistically significant increase in dividend to sales ratio. Therefore, the null hypothesis is rejected.

Table 4.2 indicates that the pre-privatisation minimum dividend per share (DPS) was TZS 0.00 and the post-privatisation minimum DPS was TZS 0.00. The pre-privatisation maximum DPS was TZS 0.00 and the post-privatisation maximum DPS was TZS 107.00 (refer table 4.2). The average pre-privatisation DPS was TZS 0.00 and the average post-privatisation DPS was 59.15 (see table 4.2). With *t*-statistic of -4.507154, t-critical value (one tail) of 1.89457861 and p-value (one-tail) of 0.001387228 (which is less than the significance level of 0.05), there is strong evidence to indicate that privatisation of TBL resulted into statistically significant improvement (increase) in dividend per share paid to shareholders. Thus, null hypothesis is rejected.

4.9. Change in Earnings after Privatisation

The minimum pre-privatisation earnings per share (EPS) was TZS -20.97 and the minimum post-privatisation EPS was TZS -5.79 (see to table 4.2). Table 4.2 also shows that the pre-privatisation maximum EPS was TZS 1.81 and the post-privatisation maximum EPS was TZS 130.88. The pre-privatisation average EPS was -10.92 and the post-privatisation average EPS was TZS 71.29 (see table 4.2). Table 4.2 also shows that *t*-statistic was -5.54, t-critical value (one tail) was 1.89457861 and p-value (one-tail) was 0.0004360084 (which is less than the significance level of 0.05). These statistics show that there is strong evidence that EPS improved (increased) significantly after TBL's privatisation. Therefore, null hypothesis that a change in EPS is zero is rejected.

Tables 4.1 and 4.2 generally indicate that there was post-privatisation improvement for all performance metrics except capital expenditure to asset ratio (CETA).

5. Concluding Remarks and Areas for further Researches

Extant theoretical and empirical evidence generally supports the common-place belief that SOEs are less efficient and less profitable than similar privately-owned firms. The author carried out the t-test Paired Two Sample for Means data analysis (using Microsoft Excel Data Analysis Tool). The results from the TBL case study showed that financial and operating performance metrics improved after privatisation. The financial and operating performance metrics that showed statistically significant improvement are return on sales (ROS), return on assets (ROA), return on equity (ROE), sales efficiency (SALEFF), net income efficiency (NIEFF), capital expenditure to sales (CESA), units produced (in hectolitres) (PROD), real sales (RESA), debt to assets (TDTA), debts to equity (TDTE), employment levels (in terms of number of employees) (EMPL), dividend to sales (DIVSAL), dividend per share (DPS) and earnings per share (EPS). However, results did not provide sufficient evidence to show that privatisation improved capital expenditure (in terms of capital expenditure to assets) (CETA) ratio. Thus, CETA might have improved by chance, not as a result of privatisation.

The current study did not explore multi-factor model(s) which affect corporate performance of a privatised firm. It is suggested that further studies be carried out to explore the effect of a simultaneous combination of multi-factors on corporate performance. The multi-factor model(s) to be studied may include macro-economic conditions like economic cycle, that is, whether economy is in recession, expansion or boom), exchange rates trends, interest rates trends, availability of foreign exchange and the like and their effect on post-privatisation financial and operating performance. The current study also did not make an attempt to study the effect of privatisation to consumers. In view of these gaps, it is suggested that further studies be carried out on the effect of privatisation to consumers in Tanzania.

The study also did not embark on the effect of reforms (other than privatisation) on the financial and operating performance of SOEs in Tanzania. Those non-privatisation reforms include reduction on barriers to trade, fiscal measures, etc. In view of this, it is suggested that further studies be carried out on "substitutes" for privatisation for financial and operating performance improvement in Tanzania.

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