THE RELATIONSHIP BETWEEN BANK OWNERSHIP AND PERFORMANCE EVIDENCE FROM NDB BANK, SRI LANKA

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ABSTRACT

The banking sector plays a vital role in contributing towards the national economic development. This paper defines bank performance based on its profitability and operating efficiencies, which are measured through several Key Performance Indicators (KPIs).The study primarily investigates whether such KPIs are affected by the change of ownership in a company and secondly by several other factors such as the size of the company, capital risk, credit risk and real GDP growth rate. To fulfill this purpose, NDB Bank Sri Lanka is taken as a model, as the bank had undergone a change in ownership from government owned to private, in the year 1993.Five years prior to and after its ownership change are analyzed to understand whether there is a significant change in the financial performance. The study focuses on two other banks as well in order to understand the market/industry trends. One of these is a private owned and the other is state owned since inception. The KPIs are calculated based on available data. The t-test shows that there is no statistically significant impact on the KPIs as a result of change in ownership. In addition an adjusted coefficient of determination (adjusted R^2) is also calculated for the change in KPIs, with a 90% threshold to adhere with preceding research. As the adjusted R^2 results with a value less than 90% have been identified for all the KPIs, a multiple regression analysis is conducted, among the KPIs and ownership together with the other variables mentioned above. In conclusion the findings suggest that not only privatization, but all factors collectively have significantly affected the profitability and operating efficiencies of NDB Bank, Sri Lanka from 1994 to1998.

Keywords*: *Financial Performance, Banks, Ownership, Determinants

INTRODUCTION

It is well known that banks, as financial intermediaries, contribute significantly to economic activities of a country in a number of ways. Delis and Papanikolaou (2009) state that during the last few decades the banking sector has experienced major transformations worldwide, due to both external and domestic factors, which have in turn affected its efficiency and performance. Writers further mention that an efficient banking sector is better able to withstand negative shocks and contribute to the stability of the financial system.

Banks channel funds from depositors to investors continuously. For this to function smoothly, banks need to cover the operational costs they incur in the due course. This denotes that profitability is a pre-requisite to persevere a sustainable intermediation function (Ongore and Kusa, 2013), which in turn ensures a sound financial system.

On gore and Kusa (2013) further reinforce the argument that financial performance of banks has critical implications for economic growth of countries. Sound financial performance is an implication that the shareholders are rewarded for their investment. This will encourage potential investors to invest more in the banking sector, which will induce economic growth. On the other hand, poor banking performance can lead to banking failure and crisis which have negative repercussions on the economic growth (Ongore and Kusa, 2013).

Sri Lankan financial sector is still dominated by the banking industry. During the last three decades, banking industry in Sri Lanka has experienced a transition period as a consequence of deregulation of financial sector, development in information and communication technologies (ICT) and globalization of the industry (Seelanatha, 2010). World Bank (2003, cited in Seelanatha, 2010) revealed that the banking industry, which holds approximately 60% of the total financial assets, is the main intermediary in the financial services sector in Sri Lanka. Hence, higher performance of the banking industry is important for the development of the financial sector.

There can be many factors which may induce the performance of banks. These factors can be broadly classified as bank specific and macroeconomic (Ongore and Kusa, 2013). The ownership, whether state owned or private, can be considered as a bank specific variable and this study emphasizes heavily on its possible effect on bank performance whilst focusing on a mixture of other bank specific and macroeconomic variables.

BACKGROUND OF FINANCIAL DEREGULATION AND PRIVATIZATION

Financial deregulation was introduced in Sri Lanka in the late 1970s (Seelanatha, 2010), with the main objective of increasing the efficiency and productivity by promoting competition, ultimately to improve the financial sector. Privatization, according to Peter, De Bruijn and Rwegasira (2010), was first announced as a state policy in Sri Lanka in 1987 and was given legal status by the enactment of two legal bills in parliament, which are the Public Corporations Act No. 22 of 1987 for the conversion of government owned business units into public corporations and the Public Company Act No. 23 of 1987 for the conversion of public corporations and government-owned business units into public companies. The main objectives of privatization in Sri Lanka at that time were according to International Labour Organization (Salih, 2001):

- further capital inducement,
- technological modernization,
- broad basing ownership ,
- Improving efficiencies of State Owned Enterprises (SOEs).

For the last three (03) decades privatization has been regarded as the dominant ownership phenomenon that contributed to improvements in economic growth and development around the world (Jegasothy, Pham and Tippet, 2006). It is widely accepted that private sector in any country is the “engine of growth”. Privatization as defined by Yarrow (1986) is the transfer from the public to the private sector of entitlements to residual profits from operating an enterprise, coupled with any accompanying changes in regulatory policy. Parker (2009) defines privatization in more simple terms, as movement of assets from state to private ownership. Privatization was initially introduced in United Kingdom (UK) and according to Miller (1995, p.82), ‘what began in 1979 as part of an overall government plan to establish a truly free market economy in the U.K., has spurred an interest in privatization throughout the world’. He further mentioned that, in the UK, the wave of privatization was initiated under the rule of former Prime Minister Margaret Thatcher, shortly after she took office in 1979. By 2008, the number of countries, including Sri Lanka, which have implemented privatization programmes, have exceeded one hundred (100).

RESEARCH PROBLEM

As identified above, it is evident that improved bank performance is a principal driver in economic development. Therefore, it is of paramount importance to identify what factors can improve bank performance. It is widely accepted that type of ownership has a substantial impact on the financial performance of a company. As explained above, financial deregulation and privatization was introduced in Sri Lanka as a means of enhancing efficiencies and productivity in State Owned Enterprises (SOEs). This was mainly because it was evident that during late 1970's, SOE's were not operating as expected (Kelegama, 1997). Hence the background research indicates that privatization was introduced with the main objective of improving efficiencies of largely unproductive SOEs. Thus the research in hand empirically analyzes whether this objective has been achieved. In other words, the research problem of this study predominantly focuses on whether a change in ownership can significantly affect the performance of banks. For this purpose, a Sri Lankan financial institution, namely NDB Bank, which currently is one of the leading commercial banks in Sri Lanka was selected. NDB was formed in 1979 as a wholly state owned bank, but was privatized in 1993, where by 61% of share capital was transferred to private ownership through a listing in the stock exchange. The performance of NDB five (05) years before and five (05) years after privatization was analyzed. This helps the researcher to understand whether there is a significant difference in the performance between the two periods; pre-privatization and post-privatization. Further, previous studies have suggested that there can be many factors (both intra-organizational and extra-organizational) which can affect the performance of a bank. For example Ali (et al., 2011) present that financial performance of a bank is dependent on bank specific variables (viz. size, operating efficiency, capital, credit risk, asset management and portfolio composition) and macroeconomic variables (viz. economic growth and consumer inflation price).

Thus few of such factors are pre-determined, such as the size of the company, capital risk, credit risk and the real Gross Domestic Product (GDP) growth rate, to study whether there is an effect of these factors on the bank performance. Further to understand market/industry trends, the performance of NDB is compared with two other major banks in Sri Lanka; one which has been privately owned bank right through out since its inception and the other, a state owned bank since inception until now.

RESEARCH OBJECTIVES

The objectives of this research are to:

- find out whether privatization has any impact on profitability of NDB Bank Sri Lanka
- investigate whether privatization has any impact on operational efficiencies of NDB Bank Sri Lanka
- look into other prominent factors which could have an impact on both profitability and operating efficiencies, if the impact of ownership is not significant.

LITERATURE REVIEW

ARGUMENTS FOR PRIVATIZATION AND IMPROVED COMPANY PERFORMANCE –EMPIRICAL EVIDENCE FROM DIVERSE COUNTRIES

Main objectives of privatization have been identified as increasing profitability and efficiencies of public sector firms. There are many preceding research carried out to examine the success of achieving the objective of improving firm financial performance, which is the scope of this study as well. D'Souza, Megginson and Nash (2004) have considered 129 share-issue privatizations from 23 developed (OECD) countries and the profitability, efficiency, output and capital expenditure after privatization were compared with the numbers pre-privatization. Their study has proved that these newly privatized companies have been able to significantly improve their performance without reducing average total employment. Loc, Lanjouw and Lensink (2006) derived a similar conclusion after considering 121 Vietnamese companies which were privatized during 1993-2002. According to them, the post privatization performance (measured by profitability, sales revenue, and efficiency and employee income) has significantly improved, with two (02) noteworthy facts: The first is that privatized companies' employment number was significantly higher than the pre-privatized SOE. The second remarkable fact is that both employee income and profitability of the privatized companies have notably increased, whereas under normal circumstances the two items have a negative correlation. Here it is believed that increase in employee income must have resulted in increased motivation, and subsequently, in increased profits.

ARGUMENTS AGAINST PRIVATIZATION AND IMPROVED FIRM PERFORMANCE – EMPIRICAL EVIDENCE FROM DIVERSE COUNTRIES

Contrary to the above findings, research undertaken in transition economies has resulted in a very different conclusion. Aussenegg and Jelic (2002) have considered a sample of 154 Polish, Hungarian and Czech companies which were fully or partially privatized between January1990 and December 1998, to examine the operating performance. They point out that the companies in their sample were not able to increase profitability and significantly reduced efficiency and output after privatization.

The measures used to identify the financial performance of the sample companies were as follows:

- Profitability:- Return on Sales (ROS), Return on Assets (ROA), Return on Equity (ROE)
- Operating Efficiency:- Sales Efficiency (Sales per Employee), Net Income Efficiency (Net Income per Employee)
- Capital Expenditure:- Capital Expenditure to Sales, Capital Expenditure to Total Assets
- Output:- Nominal sales deflated by the consumer price index
- Employment:- Total number of employees
- Leverage:- Long Term debt to Total Assets
- Dividends:- Dividends to Sales, Dividend Payout Ratio

The same ratios were used by many other scholars such as Megginson, Nash and van Randenborgh (1994), D' Souza, Megginson and Nash (2004), and Loc, lanjouw and Lensink (2006) etc. and have arrived at similar conclusions. Since these measures were first published in the research of Megginson, Nash and van Randenborgh, it is also called as MNR methodology

(Megginson and Netter, 2001). In view of the above mentioned facts, it can be seen that previous research about privatization and its impact on profitability and operating efficiencies have generated mixed results.

PRIVATIZATION AND COMPANY PERFORMANCE – EMPIRICAL EVIDENCE FROM SRI LANKA

Studies of privatization in Sri Lanka are relatively few and have been mainly written about the privatization of the plantation sector (Loh, Kam and Jackson, 2003). Abeysinghe and Paul (2004) carried out a study about Sri Lanka Telecom (a telecommunication company in Sri Lanka) before and after its privatization (which took place in 1997) and identified that performance indicators such as connectivity, revenue, operating efficiency, quality of service, network expansion and capital investment have increased significantly after privatization. The study was segregated into eight (08) sub parts and a summary of the conclusions is as follows:

Table 1: Privatization and Firm Performance – A Case Study of Sri Lanka Telecom

Area of Study	Performance after Privatization
Creation Capability	Low
Design and Engineering Capability	Medium
Marketing and Selling Capability	High
Servicing Capability	Medium
Acquisition Capability	High
Human Resources Development Capability	No Change
Information Technological Capability	High
Strategic Planning Capability	Medium

This study was more focused on the technological capabilities in the firm than its operational performance. Very few indicators have been used such as average annual revenue, average number of subscribers, and average number of subscribers for enhanced services. However, the study in hand focuses more on the company's financial health before and after privatization.

Loh, Kam and Jackson (2003) mentions, after conducting their study on the operational efficiency of Sri Lanka's plantation sector, that it is wrong to say that privatization alone can or cannot improve the efficiencies of a firm; rather it is a mixture of changes in the ownership structure, management practices and work organization. Their study on the plantation sector, which was privatized in 1992, revolved around six (06) main performance indicators, which are; yield, land-labour ratio, volume of bought crop, sales price, production cost and annual profit.

Peter, De Bruijn and Rwegasira (2010) in a similar study on the plantation sector before and after privatization, concluded with the same findings. However one distinctive fact in the latter was the observation on the reduction of employment following privatization. Even though a total of one hundred and five (105) companies were privatized in Sri Lanka during the period 1988-2008, only seven of them represent the financial sector (The World Bank, 2013), as shown below.

Table 2: Financial Sector Organizations Privatized During 1988-2008

Organization	Year Privatized
National Development Bank (NDB)	1993
Acland Insurance Services Ltd.	1993
Peoples Merchant Bank Ltd.	1994
Capital Development and Investment Co.	1995
National Development Bank of Sri Lanka (NDB)	1997
National Insurance Corporation	2001
Sri Lanka Insurance Corporation	2003

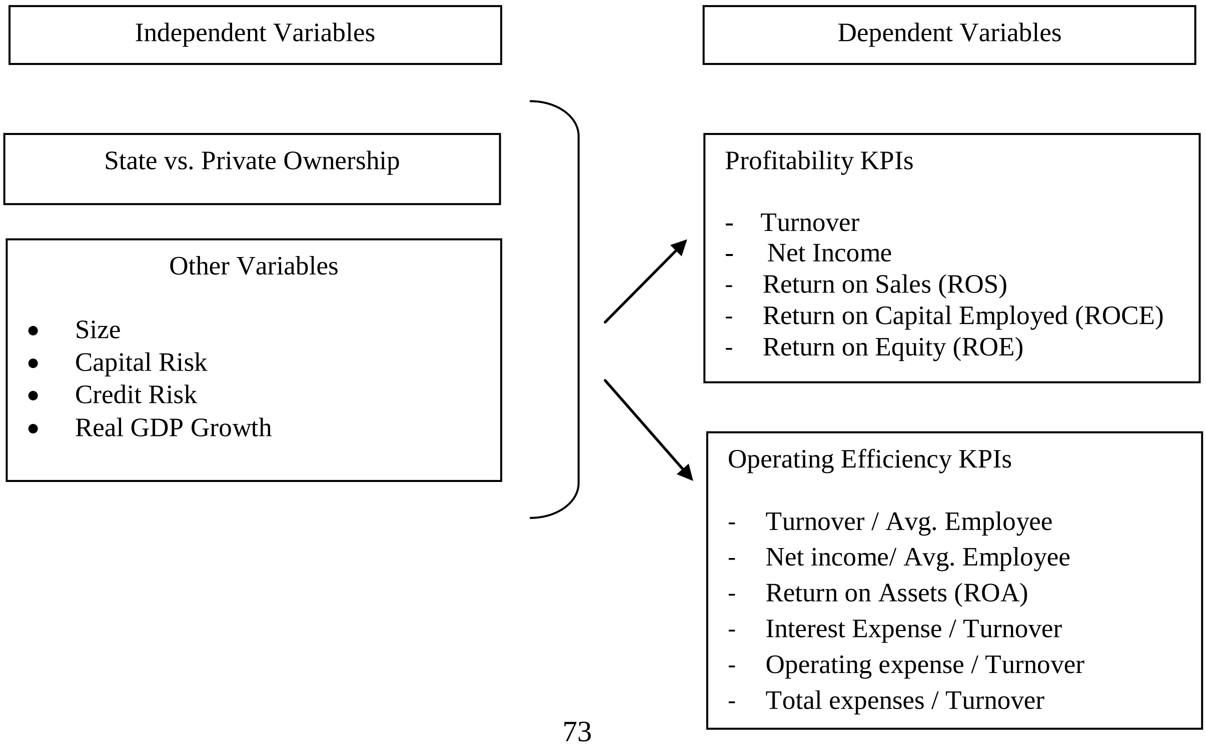
(Source: The World Bank, 2013)

The researcher was unable to find any preceding research carried out on the topic "privatization" in any of these companies. Hence, the study in hand expects to empirically understand whether change of ownership had any impact on NDB Bank Sri Lanka, with the intention of generalizing the findings for the entire financial sector.

CONCEPTUAL FRAMEWORK

The conceptual framework is developed from the review of literature discussed above and presented in the following diagram (figure 1). It shows the relationship between the dependent (profitability and operating efficiency KPIs) and independent (ownership and other) variables. Two research hypotheses are developed in order to study the relationship between the change in ownership (independent variable) and NDB Bank profitability and Operating Efficiency (dependent variables). A stepwise regression is carried out to understand the relationship between other variables (independent variables) and dependent variables. This is discussed below.

Figure 1: Conceptual Framework on the Relationship between Independent and Dependent Variable



Research Hypotheses

Following research hypotheses are developed:

1. $H0_1$: Privatization has an impact on the profitability of NDB Bank Sri Lanka.
   Ha_1: Privatization has no impact on the profitability of NDB Bank Sri Lanka.
2. $H0_2$: Privatization has an impact on the operating efficiencies of NDB Bank Sri Lanka.
   Ha_2: Privatization has no impact on the operating efficiencies of NDB Bank Sri Lanka.

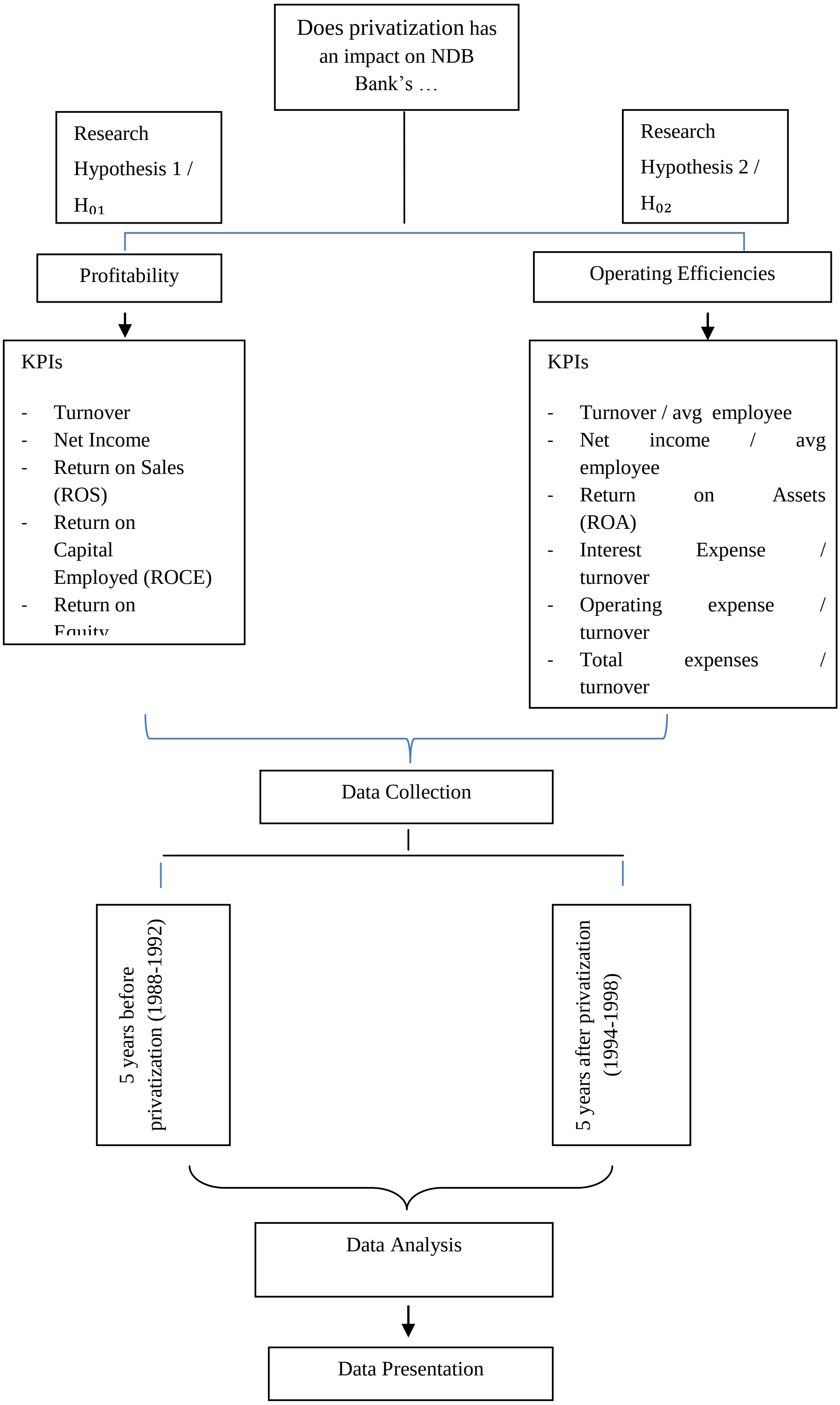
RESEARCH METHODOLOGY

To design the research process, a model was developed to keep the flow and to guide the researcher. The steps in the research process are discussed in detail below:

KEY PERFORMANCE INDICATORS (KPIS)

To be comparable and consistent with previous results, the present study employs same ratios, used by Aussenegg and Jelic (2002), D' Souza, Megginson and Nash(2004), Loc, lanjouw and Lensink (2006), Megginson, Nash and van Randenborgh (1994) and many other scholars.

Figure 2: A Conceptual Model for Research Process



KPIs for Profitability

- Return on Sales (ROS) -Net income (before tax) figure as a percentage of turnover for the corresponding period.
- Return on Capital Employed (ROCE) - Net income (before tax) figure as a percentage of total share holders' funds and long term liabilities for the corresponding period
- Return on Equity (ROE) - Net income (before tax) for a year as a percentage of equity of the firm at the corresponding year end date. Equity in this case is the book value of total share holders' funds or total capital or reserves (as annual reports have used both words interchangeably).

Notes:

i. Turnover of NDB Bank will be its interest income.
ii. NDB Bank was not paying tax before privatization, making it difficult to compare between the two periods. Hence when considering net income, before tax figure is taken to avoid this confusion.
iii. The ROS and ROE have been calculated using nominal figures.

KPIs for Operating Efficiencies

- Turnover per Average Employees - Total turnover figure for the period divided by the number of average employees.
- Net Income per Average Employees - Net income figure (before tax) for the period divided by the number of average employees.
- Return on Assets (ROA) - Net income (before tax) for a year as a percentage of total assets of the firm at the corresponding year end date.
- Cost Income Ratios -The costs of NDB Bank were categorized under two headings, viz. interest expense and operating expense. Interest expense is primary (or a direct cost) and operating costs can be considered as overheads.

  -Interest expense as a proportion of turnover - The interest expense for a year as a percentage of turnover for the year.

  -Operating expense as a proportion of turnover - The operating expense for a year as a percentage of turnover for the year.

  -Total expenses as a proportion of turnover - This is the total of interest and operating expenses for a year as a percentage of turnover for the year.

Notes:

i. First two indicators (turnover per employee and net income per employee) have used real turnover values and real net income figures (nominal values deflated by the CCPI) for the corresponding period. Rest of the indicators are calculated by using nominal figures.
ii. Average employees will be calculated as the summation of employees at the beginning and end of year, divided by two.
iii. Net income before tax figure are used for all the ratios as, NDB did not pay taxes before privatization.

DATA COLLECTION

The timescale considered in the study is ten (10) years, which covers five (05) years before and five (05) years after the organization was privatized.As NDB Bank was privatized in 1993, five (05) years before is from 1988-1992 and five (05) years after is 1994-1998. The year of privatization is ignored as it includes both public and private phases of ownership in the company.

Main sources for the above data are the annual reports of NDB Bank for the corresponding period and central bank reports, where necessary. As some annual reports did not have all the necessary data fields, internal sources were used to retrieve them. To gain an understanding about the market and industry trends, profitability and operating efficiency of Hatton National Bank (HNB) and Bank of Ceylon (BOC) were also analysed. HNB has been privately owned since its inception and BOC has been state owned since its inception.

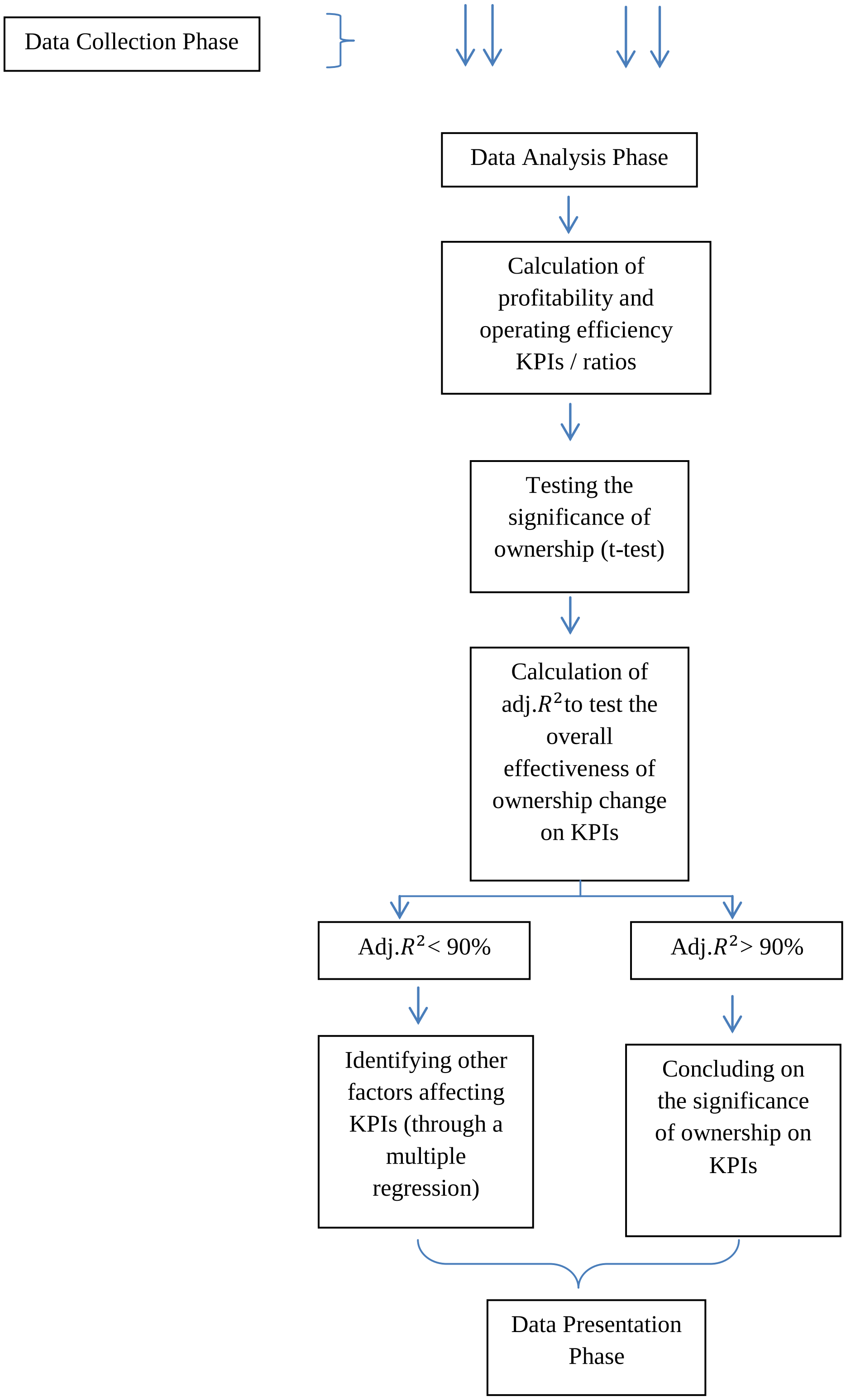
DATA ANALYSIS

The steps in the data analysis phase are illustrated in the figure below:

KPIs (both with regard to profitability and operating efficiency) are calculated using Microsoft Excel (Refer Appendix A). A t-test is used to understand whether there is a statistically significant impact on the KPIs, as a result of change in ownership. In addition, an adjusted coefficient of determination (adjusted R^2) is calculated to test the overall effectiveness of the independent variable (change in ownership) in explaining the dependent variables, which are the individual KPIs. If the adjusted R^2 results in a value less than 90%, a multiple regression analysis should be conducted, with pre-determined four (04) other variables and ownership. This 90% threshold is determined in line with Jegasothy, Pham &Tippet (2006). The oother variables are discussed below.

The statistical analysis is performed using statistical software, viz. Minitab version 14.

Figure 3: A Conceptual Model for Data Analysis Phase



Other Variables:

Size of the bank

This is measured by the total value of assets. The total asset value is considered for the whole period from 1988 – 1998.

Table 3: Size of NDB from 1988 to 1998

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Tot. Assets	3,771	4,183	5,517	6,987	9,810	12,162	13,790	16,624	20,150	26,581	31,823

Capital Risk

Capital risk is calculated as the ratio of average total liabilities to average total assets (Average total liabilities / Average total assets).

Table 4: Capital Risk of NDB from 1988 to 1998

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Capital Risk	0.59	0.62	0.67	0.71	0.78	0.81	0.80	0.79	0.79	0.81	0.83

Credit Risk

This is calculated as the ratio of average total loans to average total assets (Average total loans / Average total assets).

Table 5: Credit Risk of NDB from 1988 to 1998

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Credit Risk	0.77	0.78	0.80	0.84	0.87	0.86	0.83	0.77	0.74	0.68	0.70

For both the above ratios, average figures are calculated as:

$$\frac{\text{Value at the beginning of the year + Value at the end of the year}}{2}$$

National Economic Conditions

According to Jegasothy, Pham & Tippet (2006), Consumer Price Index (CPI) or the real GDP growth are the most common indicators of economic health. However since the CCPI is already used to remove the inflationary impact of the figures under concern, only the growth in the real GDP of Sri Lanka is used.

Table 6: Real GDP Growth Rate (Source: IMF, 1999)

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
GDP growth	2.70	2.25	6.17	4.61	4.28	6.95	5.63	5.50	3.80	6.40	4.70

FINDINGS

Determining the Significance of Privatization

This section determines the significance of ownership on profitability and operating efficiency KPIs in NDB. The results are compared and contrasted with the findings of HNB and BOC.

Profitability KPIs-NDB Bank

The change of profitability KPIs before and after privatization is calculated and a t-test is undertaken to understand whether the increase or decrease after privatization is statistically significant or not. Table 6 summarizes the results.

Table 7: Significance of Privatization on Profitability KPIs of NDB

Profitability KPIs	**Change Increase /(Decrease)**	**p-value**	**Statistically Significant**
Turnover	1850.27	0.001	Yes
Net Income	626.4	0.000	Yes
Return on Sales (ROS)	0.90%	0.855	No
Return on Capital Employed (ROCE)	0.70%	0.463	No
Return on Equity (ROE)	0.87%	0.101	No

According to table 6, it can be seen that only the change in turnover and net income is statistically significant. Turnover increase may be a result of increased sales and marketing efforts and increased net income may be a result of increased turnover and increased cost containment policies. All these reasons can be argued as outcomes of privatization.

On the other hand, it can also be argued that the bank expanded its business products, number of branches etc., to keep up with the increasing demand, which resulted in improved revenue and profits, which may not necessarily be a result of privatization.

However, on the other hand, ROS, ROCE and ROE are not significantly changed as a result of privatization. It is important to note that these three ratios too are improved after privatization, but the change is not statistically significant enough to draw any conclusions. The research findings with regard to profitability KPIs, are in line with the evidence reported by Omran (2003), where he reveals that there is no significant difference in most of the accounting measures for profitability in privatized firms, in his sample of 54 Egyptian companies.In fact Aussenegg and Jelic (2002) reports in their study that 55% of 154 firms in their sample resulted with a decline in profitability.

The reason for insignificant impact on profitability measures after privatization can be the non-existence of an economic environment to restructure the privatized firms, as fast as SOEs in other countries, where in most cases economies have been market oriented for a long time (Aussenegg and Jelic, 2002). Sri Lanka, on the contrary, has been ruled by socialist political parties most of the time.

Operating Efficiency KPIs-NDB Bank

The changes in operating efficiency KPIs too are analyzed using a t-test. The results are depicted in the table below:

Table 8: Significance of Privatization on Operating Efficiency KPIs of NDB

Operating Efficiency KPIs	**Change Increase / (Decrease)**	**p-value**	**Statistically Significant**
Turnover per Average Employee	1.85	0.000	Yes
Net Income per Average Employee	0.64	0.010	Yes
Return on Assets (ROA)	0.57%	0.502	No
Interest Expense / Turnover	22.18%	0.000	Yes
Operating Expense / Turnover	(17.13%)	0.009	Yes
Total Expense / Turnover	5.05%	0.233	No

Table 7 indicates that ratios such as turnover per average employee, net income per average employee, are improved in a statistically significant manner. These ratios explain the productivity of employees and the increase suggests that employees have been more productive in the post privatization phase. An important fact to note is that this increase has been achieved with no redundancies of staff.

Cost income ratios reveal an interesting picture. Interest expense as a percentage of turnover is increased by 22% which is statistically significant and the operating expense as a percentage of turnover is reduced by 17%, which is also statistically significant. As a result, total expense as a percentage of turnover (which is the net result of the above two ratios) is increased by 5% which is not statistically significant.

Increase in interest expense may not be a result of increase in market interest rates, as the other two banks are enjoying a reduction in this ratio. Hence it can be assumed that NDB has not been prudent in terms of their fund management.

Improvement in operating expenses as a percentage of turnover may or may not be a result of privatization. An argument for privatization can be that privatization has resulted with stringent cost containment policies which have resulted with an improvement in this ratio. However, it can be also due to scale economies from which the bank can benefit as it expands the business and experience curve effects, as a result of repeating the same job over and over again.

In brief, it can be said that there is no significant impact on operating efficiencies, after privatization of NDB Bank. This too is in line with the findings of Omran (2003).Aussenegg and Jelic (2002) states that 'a market oriented framework, which is necessary for successful privatization, has not been readily available' in their sample countries, which again can be applied to the case of Sri Lanka, as mentioned above.

However, the findings of this research contradicts that of D'Souza, Megginson and Nash (2004), Loc, Lanjouw and Lensink (2006) and Megginson, Nash and van Randenborgh (1994), in which they concluded that SOEs resulted with significant improvements in profitability and operating efficiencies after privatization.

Profitability KPIs – Other Banks (HNB & BOC)

The changes in same profitability KPIs from 1994-1998, of the other two banks are also analysed using a t-test and the results generated are shown below in table 8.

Table 9 - Profitability KPIs - Other Banks (HNB and BOC)

Profitability KPIs	HNB Bank			BOC Bank		
	Change Increase/Decrease	p.value	Statistically Significant	ChangeIncrease/ Decrease	p.value	Statistically Significant
Turnover	2911.75	0.007	Yes	8082.38	0.001	Yes
Net Income	460.84	0.001	Yes	1866.18	0.03	Yes
Return on sales (ROS)	(3.79%)	0.242	No	10.14%	0.027	Yes
Return on capital employed (ROCE)	(16.20)	0.001	Yes	(5.01%)	0.657	No
Return on Equity	(4.53)	0.167	No	13.04%	0.122	No

The analysis generates some interesting findings. The profitability KPIs which shows a statistically significant improvement during 1994-1998 are the same for all three banks, viz. NDB, HNB and BOC.

Operating Efficiency KPIs – Other Banks (HNB & BOC)

The same analysis is done for HNB and BOC operating efficiency KPIs and the findings are summarized in the table below:

Table 10: Operating Efficiency KPIs - Other Banks (HNB and BOC)

Operating Efficiency KPIs	HNB Bank			BOC Bank		
	Change Increase / Decrease	p.value	Statistically Significant	Change Increase / (Decrease)	p.value	Statistically Significant
Turnover per Avg. Employee	0.83	0.000	Yes	0.79	0.001	Yes
Net Income per Avg. Employee	0.13	0.000	Yes	0.18	0.005	Yes
Return on Assets (ROA)	0.06%	0.724	No	1.11%	0.023	Yes
Interest Expense / Turnover	(3.80%)	0.405	No	(2.65%)	0.432	No
Operating Expense/Turnover	(10.34%)	0.085	No	(8.70%)	0.253	No
Total expense / Turnover	(14.14%)	0.000	Yes	(11.36%)	0.047	Yes

Table 9 depicts that ratios like turnover per average employee and net income per average employee are improved during 1994-1998, in a statistically significant manner. The analysis of NDB too infers similar results.

Hence this leads to the conclusion that change in ownership or privatization may not be the sole factor for the improvement of the above KPIs, as the private bank (HNB) and the state owned bank (BOC) has managed to achieve similar results during the corresponding period, with no ownership change.

Determining the Effectiveness of Ownership Change on the Variation of KPIs of NDB

The following table illustrates the adjusted R^2 values for each KPI and the ownership variable.

Table 11: Effectiveness of Privatization on the Variation of KPIs of NDB

KPIs	**Adjusted R^2 with Ownership Change**
Profitability KPIs	
Turnover (TO)	79.6%
Net income(NI)	86.1%
Return on sales (ROS)	0.0%
Return on capital employed (ROCE)	0.0%
Return on Equity	25.2%
Operating Efficiency KPIs	
Turnover per Avg. Employees	84.1%
Net Income per Avg. Employees	69.2%
Return on Assets (ROA)	0.0%
Interest Expense / Turnover	86.2%
Operating Expense / Turnover	64.0%
Total expense / Turnover	7.2%

As none of the adjusted R^2 values exceed 90%, the relationship between KPIs and other variables are studied.

Determining the Relationship between Other Factors and KPIs of NDB

The above findings do not advocate a significant impact of ownership change on the selected profitability and operating efficiency KPIs. Thus Size, capital risk, credit risk and GDP growth are identified within the scope of this research, as other variables apart from ownership, which can impact the performance of the bank.
A stepwise regression is performed first using Minitab 14, to understand the most influential independent variables. This is depicted in the table below:

Table 12: Relationship between Other Factors and KPIs of NDB

KPIs	**Dominant Independent Variables through Stepwise Regression**	**R^2 (Adj) (%)**
Profitability KPIs		
Turnover	Size Ownership Capital Risk	99.8
Net income	Ownership Capital Risk	98.2
Return on sales (ROS)	GDP Growth Credit Risk Ownership	87.9
Return on capital employed (ROCE)	GDP Growth Credit Risk Ownership	87.8
Return on Equity	Capital Risk Size Ownership	86.3

Operating Efficiency KPIs		
Turnover per Avg. Employees	Capital Risk Ownership Credit Risk	99.3
Net Income per Avg. Employees	Capital Risk Ownership Size	95.1
Return on Assets (ROA)	GDP Growth Credit Risk Ownership	89.2
Interest Expense / Turnover	Ownership Size	92.6
Operating Expense / Turnover	Capital Risk	79.6
Total expense / Turnover	Credit Risk GDP	69.7

The improvement of adjusted R^2 value in most of the KPIs, when other independent variables other than ownership are considered, is an important fact to ponder.

Hence it can be concluded that in this case, not only privatization but the size, capital risk, credit risk and real GDP growth affect the profitability and operating efficiencies of NDB Bank, at varying levels.

CONCLUSION

TESTING THE HYPOTHESES - DECISIONS BASED ON THE TEST RESULTS

$H0_1$ vs. Ha_1:

T-test reveals that only two (02) out of five (05) KPIs in profitability (i.e. turnover and net income) have had a statistically significant impact due to privatization. All of the other three (03) ratios do not have a statistically significant impact through privatization.

Hence, purely based on statistical grounds, there is sufficient evidence to reject $H0_1$.

Based on sample information and the results of the test, it can be concluded that privatization alone does not have an impact on profitability of NDB Bank Sri Lanka.

$H0_2$ vs. Ha_2:

Out of the six (06) operating efficiency KPIs, only four (04) are considered for the test of this hypothesis, namely, turnover per employee, net income per employee, ROA and total expenses as a percentage of turnover. The two ratios of interest expense as a percentage of turnover and operating expense as a percentage of turnover are not considered separately as the net effect is reflected in the ratio 'total expenses as a percentage of turnover'. After conducting the t-test, it is found out that two (02) out of four (04) KPIs in operating efficiencies have a statistically significant impact as a result of privatization. These ratios are turnover per employee and net income per employee. ROA and total expenses as a percentage of turnover are not affected significantly. Since all the KPIs are not affected significantly, $H0_2$ can be rejected, as there is no sufficient evidence to support it. Based on sample information and the results of the test, it can be concluded that privatization alone does not have an impact on the operating efficiencies of NDB Bank Sri Lanka. In conclusion, it can be stated that in the case of NDB Bank Sri Lanka, not only privatization but other factors such as size, capital risk, credit risk and real GDP growth rate have significantly affected the profitability and operating efficiencies during the post privatization phase from 1994 to 1998.

LIMITATIONS OF STUDY

The findings of this study must be seen in relation to the prevailing limitations of the analysis;

- The sample period taken is restricted only for ten (10) years, i.e. five (05) years before and five (05) years after privatization. However, it should be noted that impact of privatization may not be completely understood by analyzing only five (05) years post privatization;
- To understand the impact of privatization, it is always better to have a larger number of companies in the sample. However, the research in hand adopts a case study approach and focuses only on NDB Bank, Sri Lanka.
- With regard to other factors (apart from ownership), only four (04) have been identified and discussed within the scope of this study, due to information and time restrictions. This is not an extensive list of all variables which can affect the performance of the company.

Further Research Areas

This study raises a number of issues for further research. Firstly, this research only focuses on privatization and its impact on financial performance. However, privatization has an impact on many other qualitative aspects, which cannot be directly quantified by financial figures. Hence, a more balanced approach, which examines both quantitative and qualitative, such as in a balanced scorecard, can be adopted and researched upon. In this research it was found out that other factors such as size, capital risk, credit risk and real GDP growth rate too have an effect on the same. Hence, further research can check how these variables individually or together can affect the financial performance of a company. Another research area would be to find out the other factors that can impact the financial performance of company, in addition to those which have already been identified within the scope of this study

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