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## Post-privatisation changes in management control, firm activities and performance

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## 4 Research Methodology

### 4.1 Introduction

This chapter presents the research methodology used in this study. We will describe the relevant issues required for the design of the research process. The chapter contains four parts organised as follows. Section 4.2 gives an outline of the components of the conceptual framework and the measurements used. Section 4.3 discusses the research methodology in detail. This section particularly deals with the research design, the selection of the research setting and the cases, the data collection approaches, the data analysis methods, and the credibility of the results. Section 4.4 concludes this chapter with a summary.

### 4.2 Operational definitions of the concepts and measurements used

In chapter three we developed the conceptual framework of this study. In this section we will explain how we have used its main components and the measurement tools. We will particularly focus on the following issues: privatisation, contextual factors, MCS change, and firm activities and performance.

*Privatisation:* In our literature review chapters we highlighted that privatisation is claimed to result in improved MCS practices and increasing levels of firm performance (Wickramasinghe *et al.*, 2004; Uddin & Hopper, 2003). Due to this belief and other reasons, many LDC governments have adopted privatisation as a reform policy. In the case of Eritrea, the GOE especially focussed on the transfer of ownership through the direct sale of publicly owned firms. The main objectives of privatisation are considered to be: to improve the overall operational efficiency and competitiveness of enterprises, to accelerate the adoption of new technology, production processes, and systems, as well as the expansion of investments, and to increase the role of the private sector in the ownership and management of national economic resources. In the light of these objectives, the GOE selected the potential owners of the privatised firms on the basis of their business plans and financial bids. In evaluating these business plans the GOE particularly emphasised the extent to which their implementation would contribute to the realisation of the country's overall development plan. The main interest of this study is to investigate the most recent changes and possible improvements made in MCS as well as in firm performance by our case firms in their attempt to implement their business plans.

*Contextual (internal and external) factors:* When selecting the relevant contextual variables for our study, we used a triangulation of theories. With respect to the contingency theory approach, the relevant factors that affect MCS practices include: competition, size, organizational capacity to learn, the introduction of new technology, and changing a firm's strategy. In addition,

research conducted in both LDCs and in the West on the basis of institutional theory has identified the following factors: the capacity to undertake action, the attitude of management and employees, state and regulation, trade union activities, war, and the influence of aid agencies. These factors are generally classified as internal and external issues, as shown in figure 3.3. The expected changes in MCS pursuant to the internal as well as the external contextual change factors are presented in sections 3.3 and 2.5 respectively. Further, table 2.1 presents the issues related to the external contextual factors as well as a summary of the expected results. In this chapter we will therefore only focus on the details of the internal contextual change factors and those of the firm performance measures.

When studying the internal factors the following procedures were adopted. We measured the intensity of the *competition* by the number of firms operating in the industry sector, along the lines of La Porta & Lopez-de-Silanes (1997) and Perevalov *et al.* (2000). Second, the intensity of competition was assessed by asking questions about issues such as the competition with respect to raw materials, technical personnel, selling and distribution, the quality and variety of products, and price-fixing (Khandwalla, 1977). We have represented firm *size* as the number of employees working in an organization. Larger firms have more resources and were therefore expected to introduce innovations in their MCS practices. Moreover, they were expected to be more diversified (in their product lines) and divisionalised, to employ mass production techniques, and to adopt more sophisticated MCS practices (Khandwalla, 1972).

The *capacity of organizations to learn* is influenced by the existing knowledge of and experience with MCS practices. So firms that possess more knowledge, adopt MCS practices more intensively, and that employ a larger accounting staff are expected to respond to changes in or challenges arising from their environments by changing their MCS. Therefore, when measuring the case firms' ability to learn and change, we took these issues into account. In addition, we particularly concentrated on the background knowledge of the enterprises' top management and/or owners and their attitude to MCS change, since these two groups are considerably influential (see Libby & Waterhouse, 1996). Similarly, the *capacity to undertake action* also served as an important factor in studying MCS change. Capacity to undertake action is associated with the presence of skills and resources within an organization, its mobilisation and power differentials, and the management's attitude towards these assets. If the owner/partner of a newly privatised firm is powerful and possesses a great deal of international experience, this will have an impact on the company's MCS practices. Further, the management's attitude is also an important factor that influences the development of strategy and firm performance. Issues such as the owners' views with respect to product and/or service quality, their knowledge of business practices and their choice of either accepting or rejecting accounting information as a tool in their decision-making processes have a clear influence on the extent to which firms make use of MCS.

The *introduction of new technology* can be studied by looking at the degree of new investments made in fixed assets and newly introduced MCS practices. The introduction of computerised and advanced machinery can be associated with advanced MCS practices. A *change of strategy* can be considered as a firm's means to achieve higher levels of product diversification, quality, customer services, etc. Therefore, this study concentrates on the question whether the case firms have made any changes in their strategies that involve the adaptation or replacement of their management control systems.

*MCS Change:* The MCS techniques dealt with in this study include: Planning and Budgeting, Product Costing and Pricing, Internal Reporting and Decision-making, Cost Control and Waste Minimisation as well as Performance Measurement and Evaluation. We will not elaborate on these techniques since they are well-known concepts in the accounting literature. In order to determine in what way MCS practices are actually carried out and whether or not they have changed after the privatisation process, we have investigated a number of components of each MCS technique (see table 4.1). These components were also useful in comparing the pre-privatisation MCS practices with the post-privatisation MCS practices. So we have particularly focussed on changes in the use of the components. Additionally, the question how or to which extent the case firms used MCS techniques and whether they impacted firm performance is dealt with.

**Firm activities and performance:** To assess the impact of privatisation on firm activities and performance, we used a combination of methods. The first method was to compute simple ratios and conduct trend analysis based on the quantitative data obtained from the case firms and other sources. The second method was to describe the qualitative information (obtained through interviews) regarding the impact of the contextual factors on firm activities and performance. To analyse our quantitative data, we employed eight performance measures: Profitability, Labour Productivity, Operating Efficiency, Output, Employment, Leverage, Capital Investment Spending, and Taxes (see Table 4.2 below). Table 4.2 presents the ratios and numerical figures used to compare the financial and operating performance before and after privatization. For all the case firms, the growth of the performance measures was annualised for both the pre- and post-privatisation periods. The major quantitative data sources used were audited financial statements and reports obtained from the Ministry of Trade & Industry. Next, we will discuss the performance measurement tools used in this study in more detail.

**Table 4.1** *List of MCS techniques and their components:*

Techniques used to measure MCS change:	Components of the MCS technique to be studied:
1. Planning & Budgeting	<ul style="list-style-type: none"> <li>- Budgeting (process of preparation and level of participation)</li> <li>- Profit planning</li> <li>- Operations planning (production)</li> <li>- Co-ordination of activities</li> <li>- Long-term planning (Capital Budgeting)</li> </ul>
2. Product Costing & Pricing	<ul style="list-style-type: none"> <li>- Type of costing system                             <ul style="list-style-type: none"> <li>• Actual costing vs. Standard costing</li> <li>• Absorption vs. Variable costing</li> </ul> </li> <li>- Nature of cost accumulation and allocation</li> <li>- Type of pricing system and use of MCS information</li> <li>- Freedom in product pricing</li> </ul>
3. Internal Reporting & Decision-making	<ul style="list-style-type: none"> <li>- Communication of MCS information                             <ul style="list-style-type: none"> <li>• Frequency of reporting information</li> <li>• Timeliness</li> <li>• Accuracy</li> </ul> </li> <li>- Use of more non-financial measures</li> <li>- Information reported more broadly</li> <li>- Use of existing systems but interpreting the results differently</li> <li>- Decision-making responsibility</li> </ul>
4. Cost Control & Waste Minimisation	<ul style="list-style-type: none"> <li>- Quality control methods</li> <li>- Waste minimisation techniques</li> </ul>
5. Performance Measurement & Evaluation	<ul style="list-style-type: none"> <li>- Individual or team-based performance measures</li> <li>- Firm performance measurements (extent of using financial and non-financial measures)</li> <li>- Measurement of performance in terms of quality</li> <li>- Measurement of performance in terms of customer satisfaction</li> <li>- Measurement of performance in terms of delivery innovations</li> <li>- Reward systems (bonuses and salary increments)</li> <li>- Extent of employee benefits</li> </ul>

*Profitability* was measured by assessing the growth of the annual revenues and by computing the return on sales, the return on assets and the return on equities. The pre- and post-privatisation results of firm performance in terms of profitability were computed on the basis of the above-listed variables and then compared. We compared the revenues (measured in constant local prices) to help us evaluate the annualised rate of revenue growth. In this way, we could conduct a trend analysis by using the annual revenue figures taken from the financial statements of case firms. Additionally, we calculated the return on sales by means of two alternate methods, one focussed on the operating income and the other on the net income. Evaluating changes in operating income was a reliable method to measure efficiency gains, while the assessment of the changes in net income provided a useful summary statistic of the full impact of privatisation on the performance of case firms.

**Table 4.2** Firm Performance measurement techniques.

Types of Measurement Tools:	Components of Measurement Tools:
1. Profitability	<ul style="list-style-type: none"> <li>• Revenues: Trend Analysis of annual Sales Revenues</li> <li>• <math>ROS_1 = \text{Gross Profit (Operating Income)} \div \text{Sales}</math></li> <li>• <math>ROS_2 = \text{Net Profit after tax (Net Income)} \div \text{Sales}</math></li> <li>• <math>ROA = \text{Net Profit after tax (Net Income)} \div \text{Total Assets}</math></li> <li>• <math>ROE = \text{Net Profit after tax (Net Income)} \div \text{Total Equity}</math></li> </ul>
2. Labour Productivity	<ul style="list-style-type: none"> <li>• <math>\text{Labour Productivity} = \text{Annual Revenue} \div \text{Number of Employees}</math></li> </ul>
3. Operating Efficiency	<ul style="list-style-type: none"> <li>• <math>\text{Sales Efficiency} = \text{Real Sales}^* \div \text{Number of Employees}</math></li> <li>• <math>\text{Net Income Efficiency} = \text{Net Income} \div \text{Number of Employees}</math></li> </ul>
4. Output	<ul style="list-style-type: none"> <li>• <math>\text{Real Sales}^* = \text{Normal sales deflated by the consumer price index}</math></li> </ul>
5. Employment	<ul style="list-style-type: none"> <li>• <math>\text{Total employment} = \text{Total Number of Employees}</math></li> </ul>
6. Leverage	<ul style="list-style-type: none"> <li>• <math>\text{Total debt to asset} = \text{Total debt} \div \text{Total Assets}</math></li> <li>• <math>\text{Long term debt to asset} = \text{Long Term Debt} \div \text{Total Assets}</math></li> <li>• <math>\text{Long term debt to equity} = \text{Long Term Debt} \div \text{Equity}</math></li> </ul>
7. Capital Investment	<ul style="list-style-type: none"> <li>• <math>\text{Capital Expenditures to Sales} = \text{Capital Expenditures} \div \text{Sales}</math></li> <li>• <math>\text{Capital Expenditures to Assets} = \text{Capital Expenditures} \div \text{Total Assets}</math></li> </ul>
8. Taxes	<ul style="list-style-type: none"> <li>• <math>\text{Total annual amount of taxes paid}</math></li> <li>• <math>\text{Tax per unit of sales} = \text{Total Taxes} \div \text{Sales}</math></li> </ul>

\* **Real Sales** = Nominal Sales  $\div$  Consumer price index, **ROS<sub>1</sub>** = Return on Sales based on operating income figures, **ROS<sub>2</sub>** = Return on Sales based on net income figures, **ROA** = Return on Assets, **ROE** = Return on Equity (Owner's Equity)

*Labour productivity* was measured as an annualised rate of revenue growth per employee. Hence, we measured the revenues in terms of constant local prices. With regard to *operating efficiency*, we looked at the common indicators to capture the changes in the ability of firms to extract output from any given level of input. Except for real sales, sales efficiency, and net income efficiency, we used nominal data for the calculation of the ratios. For the calculation of real sales, sales efficiency, and net income efficiency, the sales and net income data were deflated by using the consumer price index of Eritrea. This was important in order to make our findings comparable with similar studies.

*Output*: The privatisation programmes are expected to improve profitability, efficiency, production growth and output as well as to increase investment spending. We used sales levels adjusted to inflation as a measure to determine the output of firms during the pre- and post-privatisation periods. In this study *employment* refers to the annualised average number of employees working in an enterprise. Although the empirical evidence was not conclusive about the outcome of privatisation in terms of employment, privatisation is generally expected to enhance firms' profitability and stimulate investments, which would create job opportunities. In this study employment was measured as an annualised rate of employment growth.

*Capital Investment Spending*: Privatised firms are expected to invest in growth and expansion opportunities (Megginson *et al.*, 1994). To calculate the degree of capital investment spending we used two measures: capital expenditures divided by sales and capital expenditures divided by total asset ratio (Aussenegg & Jelic, 2002). On the other hand, due to the high cost of borrowing, privatisation was expected to result in a decline in *leverage*. The measurements used

for leverage were: total debt to asset ratio, long-term debt to asset ratio, and long-time debt to equity ratio.

*Taxes:* Makalou (1999) indicates that one of the motives for governments to privatise is the increase in their tax income (see chapter 2). For this reason some studies use tax income as a firm performance measure (e.g. Frydman, 1997). In this study an assessment has been made of the extent to which the case firms paid annual taxes to the government. We have considered taxes in terms of their absolute value and the ratio of taxes relative to sales. Further details on the formulas used for computing firm performance are presented in table 4.2.

### 4.3 Research Methodology

Research methodology is “the application of scientific procedures towards acquiring answers to a wide variety of research questions” (Adams & Schvaneveldt, 1991: cited in Hailemariam, 2001: p. 84). It provides the tools for conducting research and obtaining useful information. The methodology incorporates the entire process of conceptualising and observing the problem to be studied, the formulation of research questions, the data collection and analysis, and the generalisation of results.

A number of authors (Ryan *et al.*, 2002; Ghauri *et al.*, 1995; Yin, 1994) have presented alternative research methods. Literature on research methods is helpful in the process of identifying the appropriate and suitable method for conducting a particular type of research. Ghauri *et al.*, (1995) argue that selection of which method to use depends on the research problem and its objective. The selection of an appropriate method also depends on the nature of the potential study and whether a sufficient amount of adequate literature is available to properly investigate the research topics. If this is not the case, additional studies will have to be conducted to fill this gap. There appears to be a lack of literature on MCS change, firm performance, and the influence of contextual factors on firms in LDCs during the transition to privatisation. This is why a number of accounting researchers have called for a stronger focus on research dealing with these issues. By choosing Third World countries as its research setting this study tries to make a contribution to filling this hiatus in the accounting research.

In this study we try to gain insight into the development of MCS practices, the way in which the case firms carry out their activities and their performance levels. Further, this thesis investigates how the process of transition has been influenced by the various internal and external factors, while taking the socio-economic and political context into account. The study’s aim is to map out how the privatisation process has changed the MCS practices and firm performance in LDCs. To this end, in-depth data had to be collected on the firms’ MCS practices, their performance standards, and the influence of contextual factors during both the pre- and the post

privatisation periods. These data were gathered by interviews, secondary sources and other means.

The research method used in this study is the case study approach, which enabled us to collect qualitative data. As indicated by the literature, change in MCS practices and firm performance take place after privatisation. However, a large number of issues have remained un-tackled, such as the way in which change actually takes place and the influence of contextual factors, either facilitating or impeding the change process. As described by Flick (2002), this study has benefited more by following a qualitative research approach since it adheres on the use of an inductive strategy. This means that rather than starting from existing theories and testing them, it requires sensitizing concepts for approaching the social contexts to be studied. Qualitative research also helps one to include contextual conditions, and serves as a tool in detecting new issues as well as developing empirically based theories.

Qualitative data is rich, full earthly, holistic and real. It also offers a high level of face validity; it preserves the chronological flow of data and is hardly susceptible to retrospective distortion (Miles, 1979: cited in Ghauri et al., 1995, p. 85). Many accounting researchers have questioned the adequacy of the quantitative approach with respect to the study of accounting and control systems within organizations (e.g. Hopper & Powel, 1985). The following subsection will deal in more detail with the relevance of the case study method.

#### **4.3.1 The case study approach:**

First, this method helped us investigate a contemporary phenomenon within its real-life context, as the boundaries between the two were not clearly defined (Yin, 1994). In this respect, the case study method enabled us to gain access to various data sources, and to process an extensive variety of material, such as documents, artefacts, transcripts from interviews, and observations. The method also allowed a systematic observation of the policies, people, structures and context of an organization (Birnberg *et al.*, 1990).

Second, case study research is a suitable method for gaining insight into less-known areas into which little research has been conducted and on which only a limited amount of theory is available. Therefore this approach enabled us to thoroughly examine the execution of and changes in MCS practices within privatised firms. The research into MCS change conducted in LDCs is rare and its results inconclusive. So there is an obvious need for an increase in this type of research. Moreover, as stated by Ryan *et al.* (2002), case studies have become quite common in accounting research, especially in the area of Management Accounting.

Third, the investigation of MCS changes by means of firm level case fieldworks provides more insight for explaining the observed differences in practice and for understanding the process by which MCS develops. In addition, the case study approach is particularly useful in determining

the reasons why companies have chosen their control systems, how they use them, for what purpose, and in which circumstances (Hoque, 1993; Jones & Sefiane, 1992; Ansari & Bell, 1991; Hopper *et al.*, 1986; Berry *et al.*, 1985).

Fourth, case studies allow investigation of various controls including those that are difficult to measure by means of surveys (Langfield-Smith, 1997). In this way, more extensive qualitative information can be gathered, facilitating a more in-depth analysis and understanding of the phenomena dealt with in the study (Hopf, 1985: cited in Flick, 2002). The literature on privatisation studies suggest that the case study method is a rich source of descriptive data and addresses both qualitative and quantitative effects (Parker & Kirkpatrick, 2005). Finally, from an interpretative perspective, the case study approach enables one to examine whether the case observations are in line with the existing theory (Ryan *et al.*, 2002). In this way, the texts of our qualitative data have been used as a basis for reconstruction and interpretation.

There are different kinds of accounting case studies. The type we have opted for is descriptive and explanatory in nature. In accordance with this type we used the theory to help us describe, understand and explain MCS practices, firm performance and the impact of the socio-economic and political contextual factors. According to Ryan *et al.* (1992), the value of theory in case study research is measured by the extent to which it explains the practice. In order to properly explain and make sense of case study observations the theory is therefore of significant importance.

It has been our objective to extend the current theory in the field of Management Control, in particular the theory on the subject of privatised firms in LDCs. On the basis of the findings of this study we have been able to analyse and explain the circumstances in privatised firms in LDCs with respect to MCS change and firm performance. The case study approach has allowed us to explain the way in which the different contextual factors influenced the outcome of the privatisation process during the transition period. As already mentioned in the literature review, privatisation theories do not include these contextual factors. Therefore, with this study we have attempted to make a contribution to the expansion of the theory on MCS practices in LDCs. We have conducted our research by means of multiple individual case studies dealing with the particular circumstances of individual cases. This approach requires theoretical rather than statistical generalisations. Theoretical generalisation particularly focuses on the description, explanation and exploration of general practices rather than on specific observations. In our case studies, we have investigated MCS change and firm performance in privatised enterprises from the perspective of a developing country. We have investigated three privatised firms in their wider socio-economic and political context. Our approach is holistic in that it includes the firms' internal practices and the external contextual factors, as discussed in earlier sections.

### **Selecting a research setting**

When adopting the case study method the selection of a research site is of major concern (Yin, 1994). In view of the study's final objective Eritrea was selected for a number of reasons. First, Eritrea is a less-developed country and the author of this thesis is an Eritrean national who is acquainted with the Eritrean environment and culture. In this position it was easier for him to approach the various authorities and firms than it would have been if he had chosen another country. Moreover, as he is a native speaker of the local language, it was easy for him to communicate with the interviewees and translate the interview questions. The author conducted the interviews himself in the local language. This advantage was exploited during the whole period of data collection for both the pilot and the final study. It helped the researchers to significantly minimise the social desirability bias and to avoid any misunderstanding and misinterpretation of the concepts used in the interview questionnaire.

### **Selection of the case firms**

The selection of the three case firms was conducted systematically on the basis of a number of criteria: the research objectives, accessibility of the firm, firm size, the composition of the firm's ownership, the business in which the firm was engaged, a mixture of strong (successful) and weaker firms, and the number of years the firms stayed in operation after being privatised. Another criterion was to include privatised firms that were taken over by former managers or those have retained their former personnel, who acquire good knowledge of operations.

One of the problems of case study research is getting access to information (Yin, 1994; Smith *et al.*, 1988). In order to deal with this problem, the firms had to be willing to co-operate fully and to give full access to their data. First, we obtained a list of manufacturing companies privatised since 1997. We decided to approach five of the listed firms that had been privatised earliest, and that were relatively large in size and fairly diversified with respect to the composition of their ownership and their strength. By selecting firms that had been privatised relatively early, we were able to obtain a maximum amount of data on MCS change and post-privatisation firm performance. It is believed that the longer a firm stays in operation after being privatised, the easier it is to observe MCS change and measure the trend in firm performance. Additionally, firm size was considered important since larger firms are presumed to use more sophisticated management control systems. However, in our preliminary firm selection we learnt that no privatised firm had been owned by its former manager, and therefore this criterion was rejected.

The firms initially approached during the pilot study are: the Red Sea Soap Factory (RSSF), the Bini Shoe Factory (BSF), the Dahlak Shoe Factory (DSF), the Baraco Textile Factory (BTF) and the Asmara Sweater and Garment Factory (IMA). DSF was privatised in 1999 and the other four during 1997/98. In order to convince the top-managements of the study's significance, a formal letter was presented to them from the University of Asmara, explaining the study's objectives and requesting the managements' co-operation. The firms were also visited in person

to explain the study's goals. They were given the assurance that the information they provided would be kept confidential. In this way trust was being built. As also documented in former LDC-studies, data access is very hard and it is therefore vital to establish a good relationship with management and to gain its confidence.

Among the firms approached, RSSF and BTF refused to co-operate and DSF promised to do so only during the final study, as they had a tight work schedule during the period when the pilot study was conducted. Therefore, initially only BSF and IMA were selected to participate. However, BSF was later dropped due to its long bureaucratic processes. In addition, appointments were often cancelled and we were not allowed to interview the lower levels of the organization until we had completed all the interviews with BSF's manager.

In the second phase of the data collection process RSSF as well as the Red Sea Bottler's Share Company (RSBSC) and the Asmara Wine and Liquor Factory (AW&LF) were approached, which differed from IMA with respect to their ownership composition and strength. Again, RSSF was not willing to participate but RSBSC and AW&LF (also privatised firms) were.

The main purpose of selecting three case firms was to achieve a maximum degree of variation in terms of ownership composition, firm size, firm strength, and the type of business the firms conducted (for details see chapters 5 up to and including 7). In addition, our time schedule and resources were limited. We expected that MCS change would be influenced in different ways, depending on the firms' ownership composition and structure (Patton, 1990). Further, we believed that studying more than one case would strengthen the validity and robustness of our findings (Miles & Huberman, 1994). Moreover, in this way we were able to conduct cross-case comparisons when analysing our data. For further arguments for investigating more than one case see subsection 4.3.3.

### **Selection of the participants**

As participants in our study we selected people working in the case-enterprises and the governmental and non-governmental institutions. We selected those who possessed the knowledge and experience relevant to our research topic and who had sufficient time and were willing to participate in the interviews (Morse, 1998). We also received access to the lower levels of the firms' organizational structure. Top officials brought us into contact with the staff working at the lower levels of the case firms. The top included managers, administration officials, heads of the finance and the production and sales departments, various section heads, people from stores, employee representatives and others. The procedure was to approach the top management group of each department to ask them whether they could recommend people whom we could address for our data collection on both the current operations and the pre-privatisation period. The systematic way in which we approached the participants in our research study is supported by Morse (1989: cited in Flick, 2002), who claims that qualitative

samples are goal-oriented rather than random. In addition, we approached some of the interviewees through friends.

For the selection of participants outside the case firms we followed a similar procedure. The government ministries and the non-governmental institutions were approached by means of a formal letter, as explained earlier. The heads of these organizations then identified the most relevant participants to be approached. The help of friends in approaching some institutions was also helpful, as in the case of the Department of Inland Revenue, the Eritrean National Statistical Office, and the Ministry of Trade & Industry (MTI).

#### 4.3.2 Data collection

Both primary and secondary data were collected during two periods (from February until July 2003 and from October 2003 until March 2004). Fieldwork provides answers to the “how” and “why” of the issues under study by offering an extensive range of evidence through documents, artefacts, interviews and observations (Yin, 1994; Smith *et al.*, 1988). In this case study the focus was typically on both qualitative and quantitative information delivered by archival data, interviews, informant reports, and direct observation. The process of data collection was divided into two parts. The first part contained a pilot study and the second the major fieldwork. In addition, supplementary data were collected during the data validation trip from March until May 2005. During this trip data were collected to update our data bank and additional information was obtained.

##### *The pilot study*

The pilot study’s objective is to collect the study’s initial data and to allow the researcher to modify the initial research design if it proves to be faulty (Yin, 1994). In our case, another aim was to obtain an overview of the firms’ current MCS practices, and to determine whether our research questions were correctly formulated, which aspects of MCS required emphasis, which issues were relevant to our research topic, the way in which MCS change and firm performance evolved, and which factors influenced the outcome. The data collected during this stage helped us to understand the actual situation in Eritrea. Our pilot study gave us the opportunity to improve our research design. For example, we learnt effective ways of approaching potential firms, we made a selection of relevant MCS practices, we identified the contextual factors, we refined the research questions, we evaluated the relevance of including both government and non-government institutions, and we were able to improve the appointment schedule for the interviews with the participants. All in all, the pilot study enabled us to make the data collection more focussed. In addition, it helped us to improve the way in which we carried out the fieldwork.

By means of unstructured interview questions we collected a wide spectrum of data on various issues. These included the role of MCS practices in privatised firms, current control problems as

well as factors that influenced firm activities and performance. We also focussed on the process of the appointment and removal of managers, hiring and firing policies concerning employees, and their salary levels as well as other benefits during the periods before and after privatisation. In addition, we concentrated on issues such as the degree of the employees' involvement in the firm's decision-making, the employee's motivation, investment decisions as well as production and pricing decisions, capacity utilisation, and diversification of the product lines. Finally, secondary sources were addressed, such as the Ministry of Trade & Industry (MTI), the National Confederation of Eritrean Workers (NCEW), the Eritrean National Chamber of Commerce (ENCC), and the World Bank Group in Eritrea (WBGE).

Accounting researchers such as Uddin & Hopper (2001) and Wickramasinghe & Hopper (2000) argue that research issues should be gathered from the site itself through pilot studies or similar means rather than obtained 'indirectly' by means of documented information. Recent studies on LDCs conducted by these authors have generated valuable issues about difficult politics, rigid and inefficient bureaucracy as well as cultural barriers. In similar vein, the pilot study prior to the actual fieldwork was very helpful in identifying the relevant internal and external contextual factors that affect the design of MCS and post-privatisation firm performance.

### *The Case studies*

Primary data was collected through direct observation and in-depth face-to-face interviews with the respondents. These respondents were staff members and employees of the three case firms and the earlier mentioned Government Ministries, parastatal organizations and NGOs (see tables 4.3 and 4.4). They were firm managers, human resource and administration officials, department heads (from the Production, Finance, Marketing and Quality Assurance departments), section heads, knowledgeable accounting staff, employees, and workers' union leaders. As stated by Hopper *et al.* (2004b), conducting interviews is the most common data collection technique in case studies. The interview questions for the final case studies were prepared on the basis of the pilot interviews, the literature review, and our research objectives. Their form was semi-structured. We believed that this form would provide us with a broader spectrum of information than standardised questions or questionnaires (Kohli, 1978). The semi-structured interview technique enhances the data's compatibility. Although the questions posed in the interviews were predetermined, the respondents were encouraged to elaborate on the issues under discussion. In this way we were able to obtain unexpected additional information related to the research topics. The questions served as guidelines; but of course, in order to avoid superfluous information we maintained some degree of structure. Also Hopper *et al.* (*ibid*) underline that unstructured interview questions are preferred to structured questions, because the latter are inflexible and involve the risk of missing important information.

Extensive interview sessions with firm managers were crucial since these participants were the main users of accounting information, and their policies influence the activities of the entire organization. The interviews with a number of employees from each separate department provided us with useful information regarding the changes in the employees' behaviour, their perception of the new ownership and the MCS changes, their motivation, and their involvement in the firm's decision-making processes. After asking the respondents' permission, the interviews were tape-recorded.

A major task was to find knowledgeable personnel working in the case firms during the period of public ownership in order to obtain data on past MCS practices. This was not easy, since the majority of the former personnel had been replaced.

Because the interview questions had been formulated in English, some top-management participants and most of the employees in lower positions needed additional explanations regarding the meaning of the concepts addressed in the local language. Therefore, all of the interviews were conducted in the local language, thereby optimising the reliability of the information and facilitating cross-case comparison.

In the second phase of the study, interviews were conducted with relevant officials from the Ministry of National Development (MND), the Department of Inland Revenue of the Ministry of Finance (DIR) and a business consultant. In addition, follow-up interviews were conducted with responsible officials from the MTI and the NCEW. The data provided by these interviews were important in obtaining insight into the firms' operations during the period of public ownership, the role and involvement of government bodies, the governments' expectations of the privatisation process, and the influence of external factors.

Secondary data were extracted from company records, audited annual firm statements, statistical reports, books, journals, publications, business and investment plans of the case firms obtained from the MTI, and annual consumer price index reports. Data obtained from sources other than the case firms included documents on privatisation policies, government reports and regulations, newspaper publications on the progress of the privatisation process, and legal documents (such as acts, legislation reports on privatisation and purchase and sale agreements, reports of the International Monetary Fund (IMF), the World Bank (WB) and other NGOs).

Hopper *et al.* (2004b) argue that the gathering of data on management accounting issues in LDCs is relatively difficult because of their complexity and their cultural and political sensitiveness. As a consequence, the response rate to surveys tends to be low and the data's validity and reliability may often be poor, especially in countries that lack democracy and transparency and have corrupt and autocratic governments. However, in Eritrea the situation is somewhat less severe. Firms are obliged to conduct annual audits and present their reports to the tax authorities. They are also required to provide statistical figures to the MTI on a regular basis.

Moreover, the accounting system that the Eritrean firms use is based on methods used in the West. It is similar to the British accounting system and has been operational since the end of the Second World War.

Table 4.3 presents an overview of the participants interviewed and the time spent on the interviews during the whole period of the fieldwork. Table 4.4 shows the interviews conducted and the time spent on them outside the case firms.

**Table 4.3** *People interviewed in case firms and time spent (in minutes)*

Names of Case Firms	People interviewed from case enterprises										
	Gen. Mger.	HRM	Departmental Managers/Heads						TU Leader	Workers	
			Production		Finance		Marketing				Quality Control
			DH*	UH**	DH	UH	DH	UH			
IMA	210	-	120	60	180	30	-	-	30	20	30
AW&LF	120	-	90	-	180	45	-	30	30	15	-
RSBSC	120	90	120	60	120	125	120	30	30	45	75

N.B.: DH\* = Department Head; UH\*\* = Unit (or Section) Head(s)

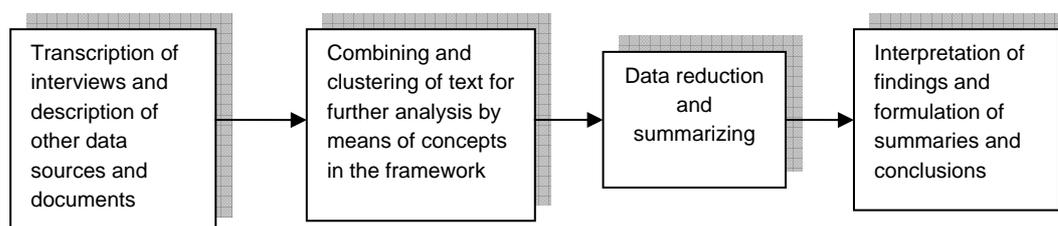
**Table 4.4** *People interviewed outside of case firms (time in minutes)*

Description	Government Ministries			Parastatals		NGOs	Others
	MTI	MND	DIR	NCEW	ENCC	WBGE	Consultant
Number of People interviewed	3	2	2	5	1	2	1
Total time in minutes	285	100	50	330	30	40	90

### 4.3.3 Data Analysis Methods:

Data analysis can be considered as an ongoing process rather than a one time event. Marshall and Rossman (1989) describe data analysis as a process of bringing order, structure and meaning to the multitude of collected data. It is a chaotic, ambiguous, time-consuming, creative and fascinating process. Qualitative data analysis is a quest for general statements about relationships between categories of data; it forms the basis for the building of basic theoretical concepts. In this study, the whole process of data collection, analysis and formulation of the conclusions was of an iterative nature. Our data analysis was based on ‘the ladder of analytical abstraction’ developed by Carney (1990: cited in Miles & Huberman, 1994: 92) and consisted of the following steps:

**Figure 4.1** *Analytical steps followed in this study:*



The multiple data collection methods used in this study has produced a triangulation of evidence (Yin, 1990). Data gathered included financial data, internal reports of the case firms, interview responses, and data on both pre- and post-privatisation MCS practices.

The combined data have been analysed by means of a qualitative approach focussed on the firm level and including the impact of contextual factors (see Figure 3.3.). The types of qualitative data analysis methods used in this study consist of qualitative descriptions, descriptive statistics, and financial data analysis. By means of an open coding technique the interviews and visual data were converted into transcripts and descriptive texts. After that, we analysed these documents on the basis of their content in order to eliminate the data that were not relevant in relation to the research questions and objectives. The open coding involved various concepts related to MCS practices, firm performance and contextual factors (see Figure 3.3). During the content analysis, less relevant passages and paragraphs of the text were removed and similar fragments combined and summarised. This data reduction facilitated data clustering and, finally, the formulation of the conclusions.

Our firm level analysis focussed on determining whether the privatised case firms had indeed achieved the results as predicted with respect to improved MCS practices, firm performance, and the implementation of business plans. In addition, it included the influence of the contextual factors on the MCS practices and firm performance and activities during the transition period as well the pre-privatisation period. After that the pre- and post-privatisation periods were compared in terms of the firms' MCS practices and performance levels. With respect to firm performance, the emphasis was on whether the case firms had managed to improve their profitability, labour productivity, operating efficiency, output, leverage, employment, capital investment, and tax payments. For each firm we calculated financial ratios and trend computations as indicated in Table 4.2. During the course of the analysis we also concentrated on the wider context of MCS, that is the influence of contextual variables. To obtain more insight into the contextual factors playing a role in MCS practices and firm performance, we used the data gathered from the government bodies, parastatal institutions, NGOs and business consultant. In addition, we particularly looked at the way in which government policies and regulations influenced the privatised firms.

There are two types of methods used by former studies for the analysis of the changes in the MCS practices and firm performance of privatised firms. The first one is to compare the MCS practices and firm performance of privatised enterprises with those of firms that remained under public ownership. The second one is to compare the MCS practices and firm performance of individual companies during the pre- and post-privatisation periods. In our study we preferred to apply the second method, because a pre- as well as a post-privatisation analysis of individual firms allowed us to gather information on the individual firm-specific effects of privatisation. As there were no examples present of firms that were still under public ownership, this was the best method. In order to obtain an elaborate picture of the MCS practices and firm performance in Eritrea we therefore collected similar data on both the pre- and post-privatisation periods of the case firms. Also, we have tried to find out to what extent usage of same MCS techniques differed in both periods.

In its attempt to identify the effects of privatisation at the firm-level, this study has gone beyond the comparing of the results of financial measures. It has focussed on the benefits gained by employees as well as on the effects of both internal and external factors. We believed that this thesis' final analysis should tell us whether the business plans as agreed upon by the case firms were in fact implemented, and whether there were problems that hindered their realisation. On this basis we would be able to draw relevant conclusions that can be communicated to the case firms and the government.

In our study, we have taken each case firm as a *unit of analysis* and also conducted cross-firm comparisons to identify the similarities and differences of these separate units. We believed a cross-firm analysis would facilitate the comparison of our case findings with those of similar studies conducted in other LDCs. In addition, our analysis of the three firms provided a good basis for making reliable analytical generalisations. Nevertheless, it was not possible to find similar case studies on MCS practice changes that were conducted in less developed countries using the contingency theory approach. The ones available were conducted using a survey approach lacked depth and have not assessed the impact of privatisation.

#### 4.3.4 Credibility of the research results

The quality of the case study findings can be assessed by means of a number of criteria. These criteria are related to concepts such as construct validity, internal validity, external validity and reliability (Yin, 2003).

*Construct validity*: in order to establish construct validity the correct operational measures with respect to the issues under study have to be adopted. In this thesis multiple sources were addressed by means of interviews and the appointment of key informants to review the draft version of the case study report. These informants gave us feedback on the findings of our research. As Denzin (1989a) put it, 'an alert and observant actor in the setting is bound to know

more than the researcher does about the realities under investigation'. Additionally, the variables used for measuring data, those listed on table 4.2, were taken from the literature reviewed earlier in this thesis.

*Internal validity (also referred as Credibility/Authenticity):* in order to establish internal validity a research study has to show causal relationships. The concept of internal validity only applies to explanatory or causal studies. Although this study did not offer much room for internal validity, we were able to achieve some of it by means of our time series analysis. We gathered both financial and interview data on the impact of privatisation as well as on the contextual factors during a time span that covered the pre- and the post-privatisation periods. In this way we managed to collect solid evidence on the relationships described in our conceptual framework.

*External validity (also referred to as Transferability/Degree of fit):* in order to establish external validity the study findings have to make sense (Miles & Huberman, 1994) and have to be fit for generalisation (Yin, 2003). The means available to reach external validity, in the case of single-case studies, are the use of theory and in the case of multiple-case studies the application of replication logic. The case study form generally aims at developing new insights for the building of theory. The theory should then be tested in a comparable context to establish whether it can be applied to other cases as well. Yin calls this 'replication logic' (Yin, 1994). In order to facilitate our 'analytic generalisation', we have also used the replication logic method in this thesis. According to Firestone (1993: cited in Miles & Huberman, 1994), there are three levels of analytic generalisation: the sample-population level, the analytic level, and the case-to-case transfer level. So although statistical generalisation was not possible, we were in fact able to apply the case-to-case transfer level on the basis of our multiple case designs. This approach enabled us to develop a rich theoretical framework. In addition, it showed us whether our findings were relevant and applicable to other similar settings. Cross-case analysis enables one to generalise one's research findings and increase the understanding of the issues under study (Denzin, 1989b).

*Reliability:* if a research study is reliable, the research methods applied, such as the data collection procedures, can be repeated while producing the same results (Yin, 2003). Instruments used to establish reliability include the case study protocol and the development of a case study database. During our research we documented the procedures adopted so that other researchers following the same approaches would arrive at similar conclusions. Case study databases serve to strengthen a study's reliability and preserve the data collected for future use. The objective of establishing reliability is to minimise a study's errors and biases, and to strengthen the quality of the findings.

In this thesis we have taken a triangulation of information approach by using multiple data sources. In addition, all interviews were tape-recorded for verification and future use.

#### 4.4 Summary and conclusions

In developing our conceptual framework for this research, we greatly benefited from our pilot study. The pilot interviews helped us identify the relevant issues and contextual factors. In addition, the pilot research enabled us to increase our insight into the case firms' MCS practices and the change processes they are going through. This chapter has dealt with the research methodology of this thesis, which includes the research design, the selection of the research site and the case studies, the data collection methods, the data analysis methods, and an assessment of the credibility of the results. Further, we have discussed the relationship of the main building blocks of our conceptual framework with the instruments used to measure the data.

This thesis presents a multiple case study conducted by means of a qualitative research approach. The multiple case study variant has helped us understand and describe the MCS practices and firm performance of three manufacturing enterprises during the pre- and post-privatisation periods in Eritrea. To obtain a complete picture the research has focussed on the wider context by incorporating contextual factors and assessing their influence on the process of change during the transition period. We have gathered a broad range of evidence consisting of a series of interviews and quantitative information acquired from the firms and other sources. The analysis of the interviews and qualitative data has helped us gain insight into the process of change and the influence of the contextual factors. Our research method has enabled us to evaluate at the firm level whether or not the privatised firms have been able to achieve the desired outcomes of the privatisation process in terms of improved MCS practices and firm performance.