THE OPEN-TO-BUY SYSTEM AND RETAIL INVENTORY METHOD:

THE IMPACT ON ACCURATE PERFORMANCE MEASUREMENT.

by

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ABSTRACT OF THESIS

Success in the retailing industry is largely dependent upon the extent to which merchandise offered is matched with consumer demands. Human judgement is critical in this process. First the targeted consumer must be identified and then the appropriate merchandise purchased so that corporate objectives are achieved. The selection of merchandise and its subsequent control is therefore critical.

This Thesis concentrates on two merchandising systems that retailers use to purchase and control merchandise. These are the Open-To-Buy system and the Retail Inventory Method. The Open-To-Buy system controls the purchase of merchandise while the Retail Inventory Method is used to value closing stocks. The major objective of this Thesis is to assess whether the Open-To-Buy system allows staff to attain set performance objectives and whether the Retail Inventory Method accurately measures performance outcomes under all conditions.

The usage of these systems in Australian department stores is first established. A case study approach is then used so that the fourteen hypotheses can be comprehensively tested.

The research indicates that the existing Open-To-Buy system does not allow performance to be maximised. Further, it is found that both the Open-To-Buy system and the Retail Inventory Method need to be amended if accurate employee performance appraisal is to occur. The Thesis concludes with recommendations for change.

STATEMENT OF ORIGINAL NATURE OF THESIS

This thesis contains no material which has been accepted for the award of any other degree or diploma in any University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the text of the thesis. I consent to the thesis being made available for photocopying and loan, if applicable, if accepted for the award of the degree.

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Chapter One

Introduction

The retailing industry, with over 1.5 million employed, or
20.4% of the total workforce, is the largest employer in
Australia. In 1988, this industry had sales in excess of $56
billion, thus confirming its importance to the national
economy. These sales were generated by many types of retailing
institutions including specialty stores, supermarkets,
department stores, chain stores, and mail order outlets.

A retailer is defined as any business that sells goods or
services to final consumers. Final consumers are those that
intend to use the purchased goods for their own consumption.
Compared to other industry sectors, retailers do not add
further value to inventory purchased before it is resold. They
purchase merchandise from manufacturers and wholesalers, store
it and then make it available to consumers in convenient
locations. Gross profits are derived from the difference
between original purchase price and the resale price.

1.1 The Nature of Retailing

The level of success enjoyed in the retailing industry is
largely dependent upon the extent to which products offered are
matched with consumer demands. A retailer therefore needs to
have a clear understanding of the consumer profile being
targeted if success is to be attained. Once the targeted

consumer is identified, the selection of the merchandise to be offered for sale becomes critically important since it is the correct matching of merchandise with consumer needs that generates sales and profit.

A critical element in this matching process is human judgement. Staff need to identify the needs of the targeted consumers and then manage the merchandise offered accordingly. This management of merchandise requires a series of interrelated decisions. These include decisions relating to the purchase of inventory, the setting of inventory holding levels, and pricing policies. It is because of the demands imbedded in this decision-making process that it has been suggested that retailing requires greater survival skills than those needed for any other business enterprise (Lewison and De Lozier, 1986).

1.2 Objectives of this Thesis

Because of the need to match consumer demands with merchandise offered, the most significant tangible asset held by retailers is inventory. As indicated above, the objective of holding this asset is to sell it at a price that exceeds its original cost, recovers all associated operating expenses, and makes a profit. The selection of merchandise and its subsequent control is critical if this objective is to be met. Control is often exercised over merchandise decision-making even before inventories are purchased. A system frequently used in this context is the Open-To-Buy (OTB) system. The objective of this

system is the control of purchases so that corporate profitability objectives are met and consumer needs satisfied. As implied, open-to-buy is the value of new stock that may be ordered in a specified period without the purchases budget being exceeded.

It is suggested that the use of such control systems will not guarantee that retailers' objectives will be attained. This is because judgement must be exercised in the selection of merchandise (range and quantity) and then in its subsequent control. This requires not only technical competence but also motivation to service the needs of consumers and to ultimately attain performance objectives. It is thus important that whatever merchandise control systems are adopted by a retailer, these must provide motivation for staff to perform at the highest level of their ability.

In addition to using the OTB system to control the purchasing of inventory, it is a common practice for retailers to value closing stocks by using the Retail Method of inventory valuation (RIM). This method involves the discounting of retail values attaching to closing stocks in order to translate them to a cost basis. By using this information, gross profits can be readily calculated and timely performance feedback provided to staff.

The measure of profit and, more importantly, purchasing decisions that have the capacity to impact significantly on profit, are heavily influenced by the OTB and the RIM. This

Thesis investigates the efficiency of this control system and the accuracy of this inventory method. Both potentially impact on the efficient allocation of resources and the motivation of staff. Specifically, the major objective of this research is to assess whether the OTB system allows staff to attain set performance objectives and whether use of the RIM results in performance outcomes being accurately measured under all conditions.

This study is significant because it concentrates on the two essential ingredients of successful retailing - inventory and staff motivation. If control systems and methods of measurement are shown to be inappropriate for the task at hand, it can be expected that over time staff will become demotivated. As a result, one of the essential ingredients of successful trading will be lost.

Somewhat surprisingly, there is little evidence of any prior published research on this significant topic. The papers that have been written tend to be largely descriptive, and concentrate on the strengths and weaknesses of the system or method under study. One possible explanation for this situation is that comprehensive studies are generally dependent on access to relevant corporate data. Because such data must include intricate details of corporate sales and profits, it is usually regarded as strictly confidential by companies. Consequently, the information is very difficult to obtain for research purposes.

1.3 Methodology

Because there is no formal evidence of the extent of usage of
both the OTB and the RIM by Australian retailers, the empirical
research in this Thesis will commence with a survey of all
Australian department stores. Information will be sought on
budgeting practices currently used together with details of
performance indicators that generate financial rewards for
retailing staff. This survey will be important to the study
since the information acquired will confirm the relevance of
the research objectives to the retailing industry.

Since the research depends on access to data normally
classified as confidential, and given the volume of data that
needs to be analysed, a case study approach will be used. This
approach will enable a comprehensive study to be undertaken
that will concentrate on the trading results of one company
over a period of time. Because of the standardisation of
systems methodology in the retailing industry in terms of the
OTB and RIM, it is most likely that the results found for this
one organisation will be applicable to others in the industry.

With a view to obtaining the necessary data for the study,
approaches were made to three companies. All companies were
classified as department store operators and employed over 1000
people. Each used over 100 different sales departments, traded
through stores at a number of different sites, and used both
the OTB and the RIM. One company agreed to assist by providing

the necessary information on the condition that, in its raw form, the data remained strictly confidential. This agreement was reached with the Merchandise Director of the company. He admitted that the reason for supplying the data was because of his concern that, in his company, neither the OTB nor the RIM were generating accurate information in all situations.

The research will be based on over 3000 pages of summary data supplied by the company. Examples of this data are included in Appendix I. Initially, the data will be analysed to ascertain those variables in the OTB formula that significantly affect the attainment of sales or profit objectives. These variables include opening stock levels, purchases, and closing stocks. Statistical processes including measures of dispersion, T-Tests, and the Mann-Whitney test will be used in this analysis.

1.4   Expected Outcomes of the Research

An expected outcome of the research is the finding that the OTB model does not allow retail staff to attain performance objectives in all circumstances. While it is possible that this outcome will not apply consistently to all major categories of merchandise, it is expected that evidence will be found that the system cannot be "all things to all people".

The analysis of the RIM is expected to provide evidence that the performance of staff is being incorrectly measured. This outcome, if significant, could show that bonus payments to staff are calculated on an incorrect basis. Also, such a

scenario could be shown to have a significant impact on limits established for the purchase of new inventory. This would, therefore, impact on the spending capacity of the company and so could potentially reduce corporate profitability. Given the level of investment in retail merchandise in Australia, such a conclusion would cause significant concern for both retailing employees and employers.

1.5 Scope of Thesis

As stated earlier, this Thesis examines the effect of the application of both the OTB system and the RIM on the accuracy of the performance measurement of retail staff. While quantitative issues will be addressed, qualitative or behavioural issues will not. Similarly, while the recommendations may need to include statements on the desirability of improved forecasting within the OTB model, determination of the specific forecasting methodology is considered a topic in itself and therefore beyond the scope of this research.

1.6 Organisation of Thesis

In general, the Thesis is structured in a manner that covers a review of the relevant literature (Chapters Two and Three), an analysis of the empirical data (Chapters Four to Ten), and finally the conclusions and recommendations that arise from the analysis undertaken in previous Chapters.

In more detail, in Chapter Two the wider issue of budgetary control systems will be discussed. It is not intended that this Chapter be an exhaustive review of the literature, but rather one that sets a framework for the more specific discussion on retailing that follows in Chapter Three. Issues to be discussed include budgeting, measurement of actual performance, issues of performance appraisal, and a review of other reasons for the use of the budgetary process.

This discussion will be extended in Chapter Three to examine budgetary control systems in the context of a retail department store. Initially, both cost and merchandise control systems will be defined, but the examination then narrows to a comprehensive overview of merchandise control systems. Included is an analysis of the OTB system as a sub-set of the total system. The methods for valuing inventory in retailing operations are also examined as is the RIM. Finally, arguments will be presented as to why a linkage of the OTB and the RIM may hinder accurate performance appraisal.

In Chapter Four the empirical work undertaken to establish the use of the OTB and the RIM in Australia is summarised. In addition, an attempt is made to identify the performance variables attracting bonus remuneration in the retailing industry.

The case study is introduced in Chapter Five. In this Chapter both the internal and external environment facing the case company are analysed. The Chapter concludes with a statement

of the Hypotheses to be tested in the remainder of the research programme.

The OTB system is the focus of Chapters Six and Seven. Specifically, the issue of whether this system impedes sales or profit maximisation is examined together with the possible effect on employee performance appraisal.

Chapter Eight summarises the results of the earlier two Chapters and then analyses the total effect on employee performance appraisal. In particular, the effect on performance bonuses is estimated. The Chapter concludes with a discussion of what changes need to be made to the OTB model if sales or profit maximisation is to occur.

Chapters Nine and Ten discuss the RIM and in particular the treatment of markdowns. The effects on performance appraisal arising from sharp increases in intake rates are also analysed, together with problems arising from the weighted averaging included in the model. From this analysis, a total adjustment to gross profit, by department, is derived. This is then extrapolated, again by department, to assess the estimated impact on bonus payments to staff. Chapter 10 concludes with an assessment of the possible effect on performance appraisal if both the OTB and RIM are used in a linked manner.

Finally, in Chapter Eleven, the major conclusions arising from this Thesis are discussed and suggested changes to current practice identified for both the OTB system and the RIM model,

if accurate employee performance appraisal is to occur. The result should be a set of recommendations that has the potential to improve significantly the performance of retailers not only in Australia, but internationally.

Chapter Two

Budgetary Control Systems - An Overview

2.1 Introduction

The objective of this Chapter is to provide an overview of corporate budgetary control systems. It is not an exhaustive study of the literature available as such a study is beyond the scope of this thesis. This overview is, however, essential to a thorough analysis of the open-to-buy (OTB) system and its interaction with the RIM since this system can only meet its objectives within the all embracing environment of a corporate budgetary control system.

This Chapter commences with a discussion of the various concepts of budgetary control systems. It then proceeds to describe the structural alternatives of such systems and to set the scene for the balance of this and following Chapters. While this Chapter concentrates on providing a general overview of budgeting, a detailed discussion of budgeting in retail department stores occurs in Chapter Three.

2.2 Definitions of Control and Budgetary Control Systems

Control has been defined by Hofstede (1967, p.11) as "a process by which one element (person, group, machine, institution, or norm) intentionally affects the actions of another element". Horngren (1984, p.5) applied this notion of control to budgetary control systems when he defined these as "the

implementation of budget plans and the use of feedback so that objectives are optimally obtained".

A budgetary control system is thus a monitoring mechanism within the organisational context. It involves the continual comparison of actual performance with previously prepared plans which may lead to corrective action being taken where necessary (Buckley and McKenna, 1972). It has been argued by Flamholtz (1983) that this monitoring mechanism is an inevitable feature of all human organisations, since there is often a lack of goal congruence between employee and employer. There is often, therefore, a need to direct human effort towards the attainment of corporate goals.

2.2.1   Open and Closed Systems of Budgetary Control

Budgetary control systems may be defined as either open or closed systems. A closed system focuses primarily on the internal organisation. It is typified by responsibility centres, in a company, acting in an autonomous manner, with little initial regard for how their actions may affect other responsibility centres or indeed the wider environment (Ansari, 1979). This type of system is based on the premise that the manager is an authority figure within his or her own responsibility centre (Horngren, 1987). It works on the principle of giving feedback to staff when actual events differ from the budgeted variables. Such a system is therefore selfish to each particular responsibility centre in an organisation and so ignores, to a major extent, causes and

effects that may occur between responsibility centres. It is this model that is most frequently described in the management literature.

In contrast, the open system seeks to recognise that each responsibility centre operates within a wider organisational environment (Ansari, 1979). It attempts to generate a situation that assists global rather than specific responsibility centre problem solving. This objective is promulgated on the assumption that global decision making will generally benefit an organisation to a greater extent than those systems not including other environmental considerations (Hayes, 1977). The characteristics of this system differ from those of the closed system primarily in the computation, reporting, and analysing of variances. Although the nature and significance of variances are calculated by this system, the objective in the analysis is to identify all causes of variances determined, whether internal or external to the responsibility centre under appraisal. It is the output from such analysis that provides the basis for problem solving and appraisal of performance.

A budgetary control system, however, may be a mixture of an open or closed system (Rosenweig, 1974). The degree of mix often depends on what is appropriate for the circumstances together with the operational level in which the control system is positioned. For example, it could be expected that a control system operating at the lower level of an organisational structure would be more biased towards a closed

system. The reason for this would be that, at this level, influences from the wider environment would be minimal since it is argued these would occur at higher levels in the organisation.

This Chapter concentrates on the closed system approach as it is this system that is characterised in the OTB model and other retailing management control systems. Although this is correct for the "traditional" OTB model, it is argued some features of the open systems model should be adopted thus maximising the potential benefits from the use of the system. A discussion of these possibilities occurs later in the Thesis in Chapters 8 and 11

2.2.2 Structure of Budgetary Control Systems

The structure of a budgetary control system often differs considerably between companies. For example, systems operated in decentralised companies may be more sophisticated than systems with similar objectives in centralised company structures. Also, differences may exist in terms of system formalisation, user friendliness, and corporate objectives.

Bruns and Waterhouse (1975) established that managers in a highly structured (decentralised) company were more satisfied with budgetary activities than their counterparts in less structured organisations. This satisfaction level was deemed to stem from the perceived benefits that flow from the control systems in use, perhaps because operating managers in

decentralised companies are more involved in making decisions and setting objectives. Also, in this situation it is likely that a reasonable level of priority may be given to the continual refinement of operational control systems.

Although differences occur in the degree of structural formality between comparative management control systems, Welsh (1988) has argued that much of a budgetary control system structure should be formalised. The reasons he gave for this are:

i)   an effective control function cannot exist on a random basis but rather needs to be systematic, consistent, and logical;

ii) the control system must be as stable as possible to enable managers to have confidence in the system itself;

iii) to enable effective communication by the system, formalisation of certain objectives, policies, and procedures is essential;

iv) for timely feedback to users, deadlines need to be established for output from the system.

While Welsh (1988) has argued for formalisation within these systems, he has also argued that this should not extend to all parts. He reasoned that, if this is done, there is a possibility that inflexibility will engulf the system, and the potential benefits arising from the use of such systems will be eroded through lack of system effectiveness.

As Otley (1978) has commented, a critical factor in the success of a budgetary control system is the extent to which the structure is "user friendly", since a system is only as good as the action taken in response to the output derived. To generate positive action from the use of such systems, the structure needs to be capable of gaining and holding strong support from the controlling and the controlled management of a company. Obviously, for this to be achieved, management needs to have confidence in the output and, as important, accept the system as a tool that assists the meeting of budgetary objectives. If these elements are not present, then it would be considered that the cost of running the system, in both time and money, would outweigh any benefits that may be derived from responses to output generated from the system (Drury, 1988).

Buckley and McKenna (1972) have also suggested that a budgetary control system must be structured in such a way as to assist a company to attain its corporate objectives. In other words, such a system must be designed as a tool to aid management to attain goals. Although these goals may be of a short or long term nature, in the final analysis any control system must form part of a structure that will enable long term objectives to be met. However, this does not mean that once a system has been designed it should not be altered. Obviously, any system must be open to change as corporate objectives vary.

If budgetary control systems across companies are compared, it will be found that differences will occur and these will be caused by differing corporate objectives. While traditionally,

one of the schools of economic thought has described corporate objectives in terms of profit maximisation (Caplin, 1971), there is certainly no universal agreement that profit maximisation is the only valid objective. Other suggestions include maximisation of corporate wealth, corporate survival, sales maximisation, satisficing profit levels, and the maximisation of management wealth (Buckley and McKenna, 1972). There is also evidence that companies may strive for two different non-conflicting objectives concurrently (Baumol, 1959). Further evidence of this was generated when Australian retailers were surveyed as part of this research. These results are reported in Chapter Four.

2.3 Characteristics of Budgetary Control Systems

Generally, the principal activities within a budgetary control system are considered to be:

i)   the preparation of budgets;

ii)   the measurement of actual performance;

iii) the comparison of budget plans with actual performance and the subsequent derivation of variances;

iv)   gaining feedback for the purposes of taking corrective operational action together with the evaluation of personnel performance.

These chacteristics have been used by Flamholtz (1983) to distinguish between four levels of control in corporate activity. He argued that first level control exists only in those situations where **actual** performance is measured. Second level control extends the notion of the first level by adding

to it any one of the other activities listed above. Third
level control consists of the measurement of actual performance
plus any two other activities while fourth level control is the
combination of all of the above activities. As the fourth
level system is generally considered to be the ideal budgetary
control system, in the management accounting and retailing
literature (see for example, Anthony and Dearden, 1988;
Horngren, 1987; Huth, 1982), it will now be discussed in more
detail.

2.4 The Budgetary Process

The budgetary process normally affects the whole organisation.
It involves the preparation of the sub-budgets followed by the
integration of these into a master budget. The process is
often coordinated by a budget committee which is responsible
for ensuring that the approved budgetary process is complied
with. This committee is responsible to top management who must
approve the master budget. Generally, this will be done after
it has been verified that the master budget incorporates the
corporate objectives and, at the same time, makes sufficient
allowance for forecasted environmental conditions.

2.4.1 Coordination of the Budgetary Process

The budgetary process is normally coordinated by a formal
budget department or an informal group of persons periodically
convened for this purpose. Anthony and Dearden (1976, p.460)
have suggested that this coordinating body is responsible for
the following functions:

i)   the publication of procedures and forms to assist with the preparation of the budget;

ii)   the coordination and publication of the basic assumptions to be used in the preparation of the budget;

iii) the communication of budget information between interrelated units of the organisation;

iv)   the provision of assistance to budgetees in the preparation of the budget;

v)   the analysis of proposed budgets and the provision of recommendations to top management to assist them in their approval process;

vi)   the administration of the process that authorises changes or adjustments to the budget during the year;

vii) the coordination and controls of the work of budget departments in the various corporate responsibility centres.

As can be seen from the above, the objective of this budget coordination group is to ensure that the most expedient budgetary process is followed. The role of this group is critical and it is argued that, without it, the timely preparation of a budget would not be possible.

2.4.2 Consideration of Corporate Objectives

Generally, the budgetary process commences with senior management determining the goals that are to be set for the budget period. These goals are consistent with those defined in the strategic plan of the budgeting business unit. As Roche (1982) has commented, budgetary control integrates both long

term and short term plans for the future so that desired outcomes can be achieved. In support of this, Schwarz (1981, p.2) has commented that, "budgeting seldom, and never successfully, stands alone, but rather flows out of a managerial process of setting objectives and strategies and building plans". It is clear from the literature that these practices are consistent for both retailing and non-retailing organisations.

Once determined, these goals are disseminated to the appropriate responsibility centres to enable initial work to commence on the budget plans. At the same time, top management begins to assemble an appraisal of the expected environment. This appraisal is ultimately used by operational management in the construction of detailed budget plans.

2.4.3 The Need For Environmental Forecasts

To avoid the budget being no more than "a statistical projection of historical fact" (Schutte, 1980), any pending change to the internal or external environment must be included in the final master budget. Examples of these movements in the environment are changes to government policy, money supply adjustments, inflationary movements, shareholder attitudes, increases or decreases in competition, and changes to social values. It is argued that unless a company incorporates these changes in the budget, the budget goals will not be realistic.

It is not only the externally generated changes that have to be recognised and acted upon, but also those that originate from

within the company. Examples of these are anticipated effects
of recent decision-making by management (e.g. creation of
additional trading departments) and the non-recurrence of
events that occurred in the previous budgeting period.
Obviously, if these internally generated changes are not
recognised, then it could be argued that the final budget is,
in part at least, only a statistical projection of the actual
achievements in the previous period.

2.4.4 Preparation of the Budget

Once the corporate goals and the environmental forecasts have
been disseminated to the various responsibility centres, the
more procedural part of the budgetary process begins. The
usual sequence is first to finalise the operating budgets, and
then to proceed to the financial budgets.

In general terms, a budget can be defined as a financial plan
expressed in quantitative terms (Harvey, 1984). It is
generally accepted that the word budget, when used alone,
refers to the master budget. This master budget usually
consists of four parts, namely a profit budget, a cash budget,
a capital expenditures budget, and a projected statement of
financial position. Each of these parts are summaries of many
interrelated sub-budgets.

Each of these parts have been defined by DeCoster and Schafer
(1982) as follows:-

i)   a profit budget is the operating plan detailing revenue,
      expenses, and the resulting net income for a specific

period of time;

ii) a cash budget is a conversion of all planned actions into
     cash inflows and cash outflows;

iii) the capital expenditures budget is a formal list of all
     approved plans for the procurement and disposition of
     assets;

iv) the projected statement of financial position is a formal
     statement of resources within the firm and their sources
     at the close of the budgetary period.

Some writers (including Horngren (1987)) have preferred to
divide the master budget into just two classifications, namely
operating and financial budgets. The operating budgets
comprise the sub-budgets of the profit budget while the
financial budgets include the cash budget, capital expenditures
budget, and the projected statement of financial position.
Justification for this division appears strong. Operating
budgets are concerned with the flows of revenues and costs
arising from the pursuit of profit, while financial budgets
specify how resources are to be allocated so that profit can be
earned. This division of budgets is followed in this Thesis
since it is considered that it more closely reflects current
practices in the retailing industry.

   i) Operating Budgets

Houck (1979) has suggested that operating budgets are normally
designed in terms of the management responsibility structure.
While the type of responsibility structure may differ from
company to company, it usually concentrates on revenue earned,

costs incurred, profit, or return on investment (Anthony and Dearden, 1988). In the case study examined in this Thesis, this budgetary structure was that used for all departments. The reason for designing operating budgets in this way is clear. Each manager is required to attain long term goals and this responsibility needs to be subdivided into shorter time periods. This is done so that control can be exercised over the pursuit of the goals established. In addition, the stated goals define the expected levels of employee performance and can be said to represent a contract of performance between employer and employee. This notion will be explored in more depth later in this Chapter.

In addition to the influence of organisational structure on budgetary system design, Horngren (1987) has also suggested that the design of cost budgets is also frequently determined by the cost behaviour patterns within responsibility centres. These costs may be fixed over a period of time or they may vary by output levels achieved. In some instances, costs may remain fixed over an output range but once the upper limit of the range is reached, the costs "step up" to a higher level. In the management accounting literature, budgets representing these various patterns of cost behaviour are normally referred to as fixed cost budgets, flexible budgets, and step budgets respectively.

Anthony and Dearden (1988) have further suggested that cost budgets can also be viewed as engineered cost budgets or discretionary cost budgets. Engineered cost budgets are

applicable when output can be measured quantifiably and the operating manager accepts total budget responsibility. Essentially, these budgets are designed to measure efficiency. Discretionary cost budgets, on the other hand, are used when output cannot be measured in quantitative terms. The role of this type of expense budget is not to measure efficiency but rather to set upper budget limits in terms of what management is permitted to spend over the budget period.

In contrast to cost budgets, a revenue budget is only prepared for those responsibility centres that are accountable to meet objectives with a revenue component. In this situation, revenue is not restricted to sales income but may also include subsidies, allowances, and incentives. This type of budget is common in retailing since revenue items such as subsidies and allowance are often budgeted for because of their potential impact on final profitability (e.g. Spohn, 1977).

As the components of the operating budget are finalised, they are reviewed against corporate or divisional goals. If these budgets are not adequately attuned to the goals set or the environmental forecasts, they may have to be revised and reviewed again. The preparation of the operating budget is considered complete when the revenue and expense budgets are formed into one overall operating budget and this document meets with the approval of the reviewing committee.

ii) Financial Budgets

Finally, it is generally agreed that the cash budget and the

projected statement of financial position summarises the expected outcome of the execution of the operating and capital expenditure budget (e.g., see Horngren, 1987). Usually, the cash budget is finalised first using as input the details from the operating and capital expenditure budgets. This budget converts all planned operational actions and capital expenditures into cash and so lays the foundation for planning the timing of capital expenditures. The major objective of preparing a cash budget is to ensure that, theoretically, the organisation can finance its on-going business plans. If it is apparent from the cash budget that the projected inflow of funds will be insufficient to meet outgoings, then either further capital will have to be raised or the operating budget or the capital expenditures budget will have to be reworked. Once the cash budget has been finalised, the projected statement of financial position is prepared as the final phase in the preparation of the master budget.

The projected statement of financial position summarises the outcomes of all other budgets, both operating and financial, and so summarises the expected wealth position should these budgets be achieved in every detail. The finalisation of the statement of financial position constitutes the final stage of the budgetary process.

2.4.5 Budget Review Process

As noted above, the outcome of each stage of the budgetary process should be reviewed before indepth work is commenced on the next. These budget reviews are often undertaken by a

committee separate from that which is responsible for the coordination of the budget process (Bird, McDonald, and McHugh, 1982). This committee sometimes comprises only the chief executive but usually it includes all members of the senior corporate management. The objective of the committee is to ensure that the finally approved master budget adequately reflects goals set by management for the period ahead.

2.4.6 Difficulties That Can Be Experienced In The Budgetary Process

A budget is seldom prepared without some difficulties being experienced. These difficulties may emerge from the demands of the budget process itself (systems generated difficulties); or they may be caused by the individuals involved in the various stages of the exercise (behavioural difficulties) (Schwarz, 1980).

The principal systems difficulty is that of accurately forecasting the future environment (Gilchrist, 1971). While it is acknowledged that it is impossible for any company to state with certainty what conditions will prevail in the future, it is generally agreed that forecasts related to expenses are not as uncertain as those relating to revenues (Dearden, 1968). This is because many variable expenses are strongly correlated to revenues earned and, therefore, as revenue levels increase or decrease so commensurate adjustments occur to expenses. The establishment of a similar predictive pattern for future revenue flows, however, is much more difficult. Since revenues normally exceed expenses incurred, the outcome of this

situation is that profit levels can fluctuate more widely than
if it were the expense environment that was more uncertain.

The behavioural difficulties generated by the budgetary process
may originate from both senior and operational management. In
this context, senior management includes those employees who
are responsible for the review of the budgets submitted.

One of the major difficulties caused by senior management is
that irrational approaches are often used to "balance the
budget figures" (Hopwood, 1980). In other words, dollar
variables are manipulated within budget documents in order to
derive a desired outcome. Such a practice can follow the
review of the profit and cash budgets where insufficient profit
or cash flows have resulted from the initial budget process.
An example of such "manipulation" is the frequent insistence by
management in such situations, that flat percentage cuts be
made to each category of expenses without first considering
whether such cuts can be justified. Equally, management
sometimes insists that similarly based increases be applied to
revenue items. Another difficulty stemming from the senior
management group often occurs in the review of the budget,
where the proposed activities are beyond the comprehension of
the reviewing team. Hopwood (1980) has argued that in this
situation, the final budget outcome may well depend on
impressions of factors that are within the bounds of their
personal experience. Consequently, it can be argued that the
final budget may well have a reduced level of business risk as
compared to the original budget submitted. It is likely,

moreover, that the future budgeted financial returns to the company could be lower than if the original budget was adopted.

The notion of budgetary slack (or gameplay) is a problem that arises because of the involvement of operational management in the budgetary process (Schiff and Lewin, 1970). While gameplay is a relatively unexplored issue (Collins et. al., 1987), it is a negative outcome of the budgetary process and is created by understating forecast revenues and/or overstating associated expenses. Buckley and McKenna (1972) have argued that operational management create this slack because of a desire to achieve the budget and so fulfill esteem and achievement needs. Hopwood (1980) has suggested that budgetary slack is achieved only after those members of management desiring such an outcome have used an array of lobbying, exhortation, and negotiation techniques. It could thus be argued that those managers most successful in the art of negotiation will fare best in any operational management race to build slack into budget documents. Obviously, these managers will be those most likely to achieve the finally agreed budgetary goals and so attract the rewards associated with the "success" attained.

Further, the frequent inclination of poorly performing operational managers to incorporate optimistic forecasts into budget documents is also a difficulty (Buckley and McKenna, 1972). The probable outcome of such an action is a set of unachievable budget goals for those responsibility centres that follow this course of action. It is suggested that this form of budgeting is dominated by a short-term view of personal or

divisional survival, and so ignores the long-term consequences of such an action.

Another major difficulty arises with attempts to synthesise personal and corporate goals (Schwarz, 1981). It is highly desirable that there is congruence between these goals since people will generally be motivated to higher levels of performance when corporate goals are accepted (Locke, 1968). If the budget is to be used as a motivational tool, it will therefore be necessary to minimise this difficulty. Only then is it likely that the maximum motivational benefit will be obtained from the budget process.

2.5 Measurement of Actual Performance

If the information from a management control system is to possess credibility and act as a catalyst in the motivation of employees, DeCoster and Schafer (1982) have argued that it must be accurate and timely. The accuracy of data is dependent on a number of factors. These include completeness of the accounting chart of accounts, reliability of source documents, degree of subjectivity that surrounds the recognition of critical events, and the extent to which data is accurately captured from source documents and subsequently translated for the purpose of report preparation.

Errors originating before data enters the measurement process often occur for a number of major reasons. First, staff training may be inadequate. This may cause inconsistencies to

develop in the recording and processing of identical data over
a period of time. Second, the chart of accounts may be
inadequately referenced. Again, this may cause inaccuracies in
the coding and subsequent accumulation of like information.
Third, source documents may be incorrect. This may be caused
by persons internal or external to the organisation. Examples
of this are time cards used by employees and creditors'
invoices sent to the company. Although all these errors should
be isolated at various control points in the control system,
often the first indication that an error has occurred is when a
variance report (a comparison of actual outcomes versus
budgeted expectations) is prepared. This possibility gives
support to the view that the accuracy of variance reports must
be verified before such reports are used. Such usage may be
to assist in the review of employee performance or, if a
retailing company where the RIM is used, to confirm profit
intake rates prior to the calculation of gross profit figures.

While the data entering control systems should be verified for
accuracy, further erosion of accuracy may occur if data has to
be manipulated or recalculated within the system and adequate
controls are not in place (Markin, 1977). An example of this
may be derived from the retail industry where, if a company
uses the retail inventory method of stock valuation, the prices
showing on creditors' invoices must be recalculated to retail
values before the information can be used as input to the
intakes control system. If adequate controls are not used,
this data translation may be inaccurate, thus culminating in
errors entering the actual measurement of performance.

While the above paragraphs concentrate on the accuracy of data entering the system, the subjectivity that surrounds critical events can also affect the final measurement of actual performance. Recognition and the subsequent acceptance of a critical event determines when a specific transaction is recognised in the reporting system. Myers (1959) has described a critical event as the most appropriate moment of time when the most critical decision is made or when the most difficult task is performed. He has argued that for this recognition to occur, three main characteristics should be present. First, the transaction must be capable of measurement. Second, the event must have involved an entity beyond the responsibility centre originating the transaction. Third, the transaction must have occurred. It is obvious that, if accurate measurement of performance is to occur, clear rules must be established with regard to the recognition of critical events.

Finally, information must be timely if output generated by the management control system is to be used confidently. In this instance, timeliness has two dimensions. The first considers the time it takes to generate the information, and the second, the period of time covered by the reports issued (De Coster and Schafer, 1982).

Ideally, a control report should be received by a decision-maker before decisions dependent on the information have to be made. As Welsh (1988) has commented, such a report should be received as soon as possible after the measured event occurs.

In practice, however, there can be a tendency in some organisations to delay the release of feedback reports if it is believed the accuracy of the information can be further improved. While the objective of such a delay can be supported in terms of informational accuracy, it can also be argued that other "costs" accumulate if staff receive no feedback.

The time span covered by reports also affects the usefulness of reports issued. To maximise usefulness, Magee (1986) has suggested that data contained in reports should be aligned to a budgetary period or part thereof. An example of this can be derived from the retailing industry where merchandise budgetary control systems generally focus on a six monthly pattern which coincides with the summer and winter buying seasons. In addition, managers of responsibility centres usually have their performance evaluated at the end of each buying season and will generally only seek information considered to be relevant to the period currently under review.

2.6 Comparison of Actual Events With Budget Plans

When actual outcomes are compared with budgets, any part of the total budget can be included, be it revenue, cost, profit, cash, or capital expenditure. Such analysis can be undertaken to any depth but the degree of depth appears to be inconsistent across the corporate sector and indeed between responsibility centres within defined organisations. As DeCoster and Schafer (1982) have commented, often the depth of analysis undertaken is determined by the needs of the various groups of user

management. For instance, more senior management normally require less detailed analysis than those managers more closely involved in the day to day operations of the company. Apart from the depth of analysis, the format of variance information supplied also differs between industries. Since this Thesis focuses on the retailing sector, it is the format of variance analysis used in this industry that is considered further in this Chapter.

i) Sales Variances

A positive sales variance occurs when actual sales exceed budgeted levels while the opposite outcome yields a negative variance. Variances can be determined using any number of parameters, e.g. responsibility centres, market segments, product categories, or any combination of these. Analysis undertaken often involves only a simple comparison of actual versus budgeted sales but such analysis becomes more complex if variances are subdivided into price, mix, and volume variances. A more detailed illustration of sales variances can be found in Horngren (1987).

ii) Cost Variances

Costs may be divided into fixed, semi-variable, or variable costs. A favourable cost variance occurs when actual costs are less than budgeted levels, while a negative variance arises in the opposite situation. Examples of fixed costs include depreciation, land tax, and rent. A characteristic of such a cost is that it is expected to remain unchanged for the budgetary period, regardless of the level of trading.

Costs are designated as semi-variable when they are regarded only as fixed for a predetermined sales range. Once activity occurs outside this range, another fixed cost base becomes applicable. Costs that move in correlation with another variable such as sales are called variable costs (Lewison and De Lozier, 1986). If sales are used as a base when the expense budget is prepared, each component is defined as a percentage of the responsibility centre's budgeted sales volume. Later, when actual expenses are compared to budget, variance reports are prepared isolating the dollar variances between actual and budgeted amounts. Often this fundamental analysis is extended by applying a "flexible budget" methodology to the variances isolated. This approach identifies the level of variable expenses that should have been incurred given the sales volume achieved (Markin, 1977).

iii)   Profit Variances

Often "first level" profit variances are derived initially for each responsibility centre by deducting the net cost variances from the net revenue variances. This initial analysis is then often extended further by calculating profit rate and sales volume variances. The benefit from undertaking this extended analysis is that it provides a segmentation of the total profit variances into variances representing the major causes for not attaining profit budgets.

iv)   Capital Expenditure Variances

Capital expenditure variances are normally calculated by simply deducting actual from budgeted expenditures. Since capital

expenditure budgets are essentially an "authority to spend", any overspending indicates that the implied authority has been exceeded. Although post-spending corrective action is difficult to take, any overspending will have a flow-on effect to the cash budget variance report.

v) Cash Budget Variances

These variances are again calculated by deducting the actual amount incurred from budgets set. The product of such analysis will normally represent the sum of variances that have arisen in other variance reports, such as the profit and capital expenditure reports. It is suggested that variances arising from cash budgets indicate that variations to other budgets have occurred. The actual problems will be identified in the other variance reports. Thus, if any corrective action needs to be taken, a specific action plan would be prepared using data in other variance reports in preference to the cash budget variance report.

2.7 Performance Appraisal

As Otley (1978) has stated, the data used to appraise the performance of managers should measure both the effectiveness and efficiency of the actions taken over the reporting period. Effectiveness in this context means the correctness of the manager's actions in relation to the environment, while efficiency refers to the productivity levels achieved as a result of the actions taken. The use of these measures is supported since, summed together, they indicate the total

outcome of a manager's discretionary actions. Obviously, the purpose of undertaking such appraisals is to identify those employees who have maximised output as a direct result of their actions taken (Jaques, 1961).

Performance appraisal is often achieved by analysing data in feedback or variance reports that highlight deviations from budgets previously agreed (Hofstede, 1968). As Huth (1982) has commented, the OTB system can be used in this role. Positive variations imply that discretion has been well exercised while negative variances suggest the opposite. Decisions made by senior management, as a result of conclusions formed from the appraisal process, will depend on whether the variances were favourable. Negative variances imply punishment, extinction, or enforced behavioural change while positive reports suggest intrinsic and/or extrinsic rewards for employees (Cheng, 1976).

Although at first consideration the use of budgets or short term plans as the basis of performance appraisal seems logical, there are problems with this approach (Dearden, 1973). First, there is the difficulty of forecasting the future environment for a retailer (Arnold et al., 1983). If this forecast is not accurate then it must be questioned whether the resultant budget should be used as a basis for evaluation. Second, variance reports do not always isolate the variances that arise solely through the actions of a manager. It is suggested that environmental factors beyond the control of a manager often influence the size of either positive or negative results. Third, Dearden (1973) has argued that a one year time span is

normally an inadequate base for accurate assessment. He has reasoned that many actions of a manager have long term consequences and that only the negative outcomes will occur in the short term whilst the positive and planned benefits will flow in successive periods. Such an outcome over time, will inevitably steer a manager towards a short-term decision making perspective which obviously may not be in the long-run interests of the organisation.

2.8 Other Reasons For Undertaking The Budgetary Process

Although a primary purpose of budgeting is to provide input to the budgetary control process, budgeting also serves a number of other purposes within the corporate framework (Bruns and Waterhouse, 1975; Hofstede, 1967; Kenis, 1979). While these purposes may be classified under the headings of planning, communication, and motivation, none are necessarily divorced from the purpose of control because, in some way, each serves to support the budgetary control objective. For this reason, each is discussed in the following paragraphs.

2.8.1 Planning

An important purpose of budgeting is to provide integration for the planning of future corporate activities. Planning, in this context, has been defined by Steiner (1963, p.17) as "the process of determining the major objectives of an organisation and the policies and strategies that will govern the acquisition, use, and disposition of resources to achieve those objectives". While the planning of future corporate activities

usually embraces a long-term perspective, budgeting is generally concerned with a shorter planning time scale, normally not exceeding twelve months. Therefore, the sum of present and future budgets should, in theory, equal the long-term plan of the company as it stands at that time.

Long-term plans, however, may need to be adjusted from time to time by a company. Such actions will necessitate, in some situations, adjustments to budgets already finalised. These adjustments may arise for any number of reasons but most frequently they are caused by strategic actions by competitors together with other environmental influences on the organisation. These other influences may be political, economic, legal, etc. Thus, if these moves in the environment are significant, they may signal opportunities or threats that may challenge the organisation in future trading periods. Obviously, these need to be integrated into future budget planning.

It is suggested that this continual review of long-term plans is consistent with the objective of budgetary control systems. As stated earlier, the objective of such systems is the directing of organisational activity towards the attainment of corporate objectives (Roche, 1982). It can therefore be argued that, if such a review does not occur, the budgetary control system will control business only on a short-term perspective, with little ability to direct short-term actions towards the attainment of any logical long term position.

2.8.2 Communication

The budget also serves the purpose of communicating financial data to line and senior management. Hanson (1966) has suggested that the budget provides line management with a specific knowledge of those outcomes that will meet the approval of their superiors. Ronen and Livingstone (1975) have further suggested that budgets communicate to subordinates the parameters of the task they face. The budget can thus be viewed as a device that communicates minimum standards of performance and sets basic achievement targets in terms of both effectiveness and efficiency.

Where superiors and subordinates agree that a particular budget is a reasonable minimum standard of performance, it can be argued that the budget defines a contractual understanding between employer and employee. In such a situation, the employee is contracted by the employer to perform a service (in this case attaining a budget) on the employer's behalf, with the assistance of decision making authority (Jenson and Meckling, 1976). A successful conclusion to such a "contract" would be the attainment of the budgetary goals. If the outcome is successful, it would be expected that rewards would accrue to the employee in recognition of the achievement.

Shillinglaw (1982) considered that the budget is also a continuing reminder to senior and line management of the resource plan accepted at the time of budget review. Thus, the budget is not perceived as a one-time communication document but rather as a device performing an ongoing communication

function during the budgetary period.

2.8.3 Motivation

The budget provides a basis for employee motivation which, in this context, has been described by Searfoss and Monczk (1973, p.544) as "a psychological construct which is used to account for the factors that arouse, maintain, and direct behaviour towards a goal". Roche (1982, p.19) has further defined motivation as "the process by which a goal is perceived and sought".

Although multiple theories of motivation have been advanced, many researchers (e.g. Schermerhorn, Hunt and Osborn, 1982) have concluded that the content and process theories dominate all other theories advanced. Content theories concentrate on the needs of individuals. Studies of these needs are used as a basis for understanding work behaviour and ultimately job satisfaction. Theorists thus argue that poor employee performance is an outcome of blocked needs. Maslow (1943) and McClelland (1962) have both sought to define these needs more precisely. Maslow identified five levels of need in daily living: physiological, safety, social, esteem, and self actualisation. McClelland, on the other hand, hypothesised that people have just three types of need: achievement, affiliation, and power. McClelland argued that if employers sought to identify such needs in their employees, work environments could be created that responded to the need profiles of individual employees. These initiatives would therefore most likely raise the levels of employee motivation

in the organisation.

Developers of the process theories have reasoned that a person's behaviour is influenced by the thought processes of the mind. A number of process theories have been advanced, e.g equity theory, goal setting theory, and the expectancy theory. The equity theory advanced by Adams (1963) is based on the argument that people will strive for equity of rewards or treatment between themselves and other employees. This pursuit is considered selfish to the individual, and only continues as long as the employee believes he or she is receiving inferior conditions. Locke (1968) proposed the theory of goal setting. He suggested that employees have certain goals that they have set for themselves, and this enables an organisation to influence the motivation of employees solely by influencing the goals of employees. Vroom (1964) in developing the expectancy theory, sought to combine many of the concepts included in both the content and process theories. The expectancy model was based on the premise that work motivation is determined by individual beliefs regarding effort-performance relationships coupled with the desirabilities of various work outcomes associated with different performance levels (Schermerhorn, Hunt, and Osborn, 1982). In short, expectancy theory asks under what circumstances will employees exert maximum efforts towards the attainment of work objectives? To answer this, Vroom (1964) suggested that the employee must:

    i)   believe that hard work will enable performance levels
         to be reached;

    ii) believe that the attainment of performance levels will

result in intrinsic or extrinsic rewards;

iii) have attributed positive values to the possible
rewards.

While the results from the use of this model have not been
decisive, research has confirmed that the budget can increase
employee motivation. Such an outcome occurs when employees
firmly establish a link between attainment of minimum budgetary
standards and the payment of rewards (Schermerhorn, Hunt, and
Osborn, 1982). It could be concluded, therefore, that under
conducive circumstances employees can be motivated to achieve
budgetary goals. Moreover, in these cases, employees are more
likely to have a positive view of the budgetary control system,
since they will perceive the system as a tool that assists in
their pursuit of work and personal objectives.

2.9 Summary

This Chapter has given an overview of budgetary control
systems. It commenced with a discussion of the various
structural alternatives that exist within such systems and
suggested that the structure of a system could be both
influenced by the degree of centralisation within an
organisation and the degree of system formalisation sought by
management. The principal characteristics of these systems
were then discussed. These were identified as the preparation
of budgets, measurement of actual performance, comparison of
actual performance against budget plans, and the performance

appraisal of employees.

A budget was defined as a financial plan expressed in quantitative terms. It was suggested that the master budget can be divided into two classifications - operating and financial. The budgetary process comprises a number of sequential steps, from the formation of budget goals to the finalisation of the financial budgets. This process is normally coordinated by a budget committee that ensures that the correct budgeting sequence is followed. The operating budgets are completed before the financial budgets and, at each stage in the process, the various budget components are reviewed by top management. It was acknowledged that this process is not without its difficulties and these occur as a result of the process itself or the people involved in the exercise.

Discussion then moved to the second characteristic, namely the measurement of actual performance. It was suggested that accuracy and timeliness are essential in this process. It was argued that, if adequate controls are not in place, serious errors could enter the budgetary control system, thus eroding the output credibility of the system.

The methodology surrounding the comparison of results achieved against budget plans was then evaluated. This comparative work is normally referred to as variance analysis and it forms the basis of the fourth characteristic considered, namely the performance appraisal of employees. While it was recognised

that performance appraisal is generally related to budget achievement, it was suggested that there are a number of problems associated with such an approach. The Chapter concluded with a review of other reasons for undertaking the budgetary process.

The Chapter has provided a basis for an examination of budgetary control systems in the retail department store environment. This examination will be undertaken in the next Chapter. These two Chapters will then provide a theoretical platform for the empirical research undertaken later in this Thesis.

Chapter Three

Budgetary Control In A Retail
Department Store

3.1 Introduction

The purpose of this Chapter is to discuss budgetary control
in the context of a retail department store. This discussion
begins initially on a "macro" basis, but then narrows down to
focus on merchandise control systems - a component of the wider
budgetary control system. Although the methodology of a
merchandise control system is reviewed, attention is
specifically focussed on the OTB system and the RIM of
inventory valuation. The OTB system is used to control the
inventory/sales relationship while the RIM provides a mechanism
to give continual profit feedback to responsibility centre
managers. The strengths and weaknesses of both the OTB system
and the RIM are analysed. The Chapter concludes with a
discussion of how the "mechanics" of both these systems affect
the accuracy of employee performance measurement. This
analysis is important since it underpins the empirical work
that is detailed in the following Chapters of this Thesis.

3.2 Budgetary Control Systems in a Retail Department Store

Markin (1977) has suggested that if control is to be effective,
it needs to be directed at the major components of a company's
operations. He argued that, in the case of a retailer, this
means that sales, cost of goods sold, gross margin, expenses,
and the capital expenditure categories need to be targeted.

Sales, cost of goods sold, and gross margin feature in merchandise control systems while operating and capital expenditures are normally included in cost control systems. Consistent with other industries, control in the retailing sector is concerned with providing a mechanism to enable the achievement of corporate plans.

Retail department stores are normally structured on the basis of responsibility centres. These centres can often be identified as gross profit or expense centres, although in some situations profit centres may be used. The gross profit centres originate from the various merchandise groupings within the store, while the cost centres stem from the work groups (e.g. finance, personnel, etc.) that are formed to service the merchandising function of the organisation. Since these responsibility centres normally operate as "self contained entities", it can therefore be reasoned that department store systems reflect the closed system control model (Ansari, 1979). This was discussed in Section 2.2.1.

Merchandise control systems usually concentrate on the control of initial markups, inventories, and markdowns in addition to those major operational components referred to in the previous paragraph. The objective of these systems is to achieve a desired balance between inventory investments and the fulfilment of customers' wants (Rachman, 1975; Redinbaugh, 1976). Markups comprise the differences between the cost of merchandise and the initial retail price, while markdowns

encompass the reduction of initial selling prices to levels that will enable inventories to be sold (Huth et al., 1982).

Cost control systems are concerned with the control of expenses and are prevalent in those responsibility centres that fit the description of "cost centres". In a retail environment, the purpose of cost control systems is the restriction of expenditures to budgeted levels. These levels may be dependent on a variable such as sales achieved, or they may be stated as fixed amounts and thus be immune from the fluctuations of another variable.

Since this Thesis is concerned with an examination of the application and effect of the OTB system and the RIM on employee performance appraisal, the ongoing discussion concentrates on those variables (i.e. sales, purchases, etc.) embraced in the merchandising control systems of a retailer. It is these variables that are fundamental to the operation of the OTB system and the RIM.

3.3   The Budgetary Process of a Retailer

3.3.1 Introduction

As discussed in the previous Chapter, there are four principal budgets used by retailers, these being operating budgets, cash budgets, capital budgets, and a projection of financial position. Each of these budgets is often divided into a number of sub-budgets strongly aligned to the various corporate responsibility centres in use at a given time. For a retailer,

the operating budget is formed by aggregating the merchandise and expense budgets (Berman and Evans, 1989; Bearchall, 1975). The merchandise budgets form the basis of the various merchandise control systems, while the expense budgets perform a similar role for the cost control systems. A merchandise budget is a financial plan that details the inventory (measured in dollars) that a retailer expects to buy and sell during a specified budgetary period.

Apart from defining the merchandise flows for a given budgetary period, the merchandise budget also includes the inventory levels planned for critical time breaks in the period together with the anticipated volume of markdowns. All of these elements are integrated in order to derive the budgeted gross profit within the defined merchandising budget period. This budget period normally does not exceed six months (Markin, 1977; Richert et al., 1974). As Markin (1977) has stated, the objective of a merchandise budget is to provide a plan that forms the basis for directing and controlling corporate merchandising activities towards desired merchandising goals.

Arnold et al. (1983) have identified five decision steps that are required to formulate a merchandise budget. These steps are similar to those suggested by other authors and include: the forecasting of sales; the planning of inventory levels; the planning of reductions; the planning of purchases; and the planning of initial markups. As Duncan and Hollander (1977) have argued, if the merchandise objectives are to be attained, these steps must be finalised well before the budget becomes

operational. This is because of the time gap that occurs between purchase order placement and merchandise delivery, together with the need to finalise promotional activities before the receipt of new-season merchandise. In addition, they have also suggested that the budget period should not exceed the time frame for which accurate forecasts can be made, and that the budget should be flexible enough to permit any necessary adjustments.

3.3.2 Budgeting for Sales

Since all the other elements in the merchandise budgetary process are dependent on the volume of expected sales, it can be argued that the most critical function in the complete process is the forecasting of sales (Arnold et al., 1983). Merchandising executives have stated, however, that such forecasting is a major problem (Czepiel and Hertz, 1977). In a study undertaken by Czepiel and Hertz, respondents indicated that retail sales forecasting was normally undertaken using the judgement, intuition, and subjectivity of the budgeting executives. Few respondents stated that statistical methods were used in their attempts to forecast. Berman and Evans (1989) have supported these findings although they did comment that some larger retailers use statistical methods such as time series analysis, trend analysis or multiple regression. While it could be suggested that the use of statistical methods should improve the accuracy of forecasting, Chambers et al. (1971) concluded that each of these methods are reasonably accurate in a time frame of up to twelve months only. When it is considered that budgets are normally finalised some time

before the commencement of a budget period, it can be argued that the accuracy of the forecasts could be suspect for at least the latter part of this period. This situation gives support to Duncan and Hollander's view (1977) that budgets must be flexible enough to enable apparent forecasting errors to be corrected during the tenure of the merchandising season.

Although research has indicated that many retailers do not use sophisticated statistical forecasting techniques to predict sales, Berman and Evans (1989) and others have suggested that those companies using non-statistical methods do consistently incorporate a number of factors in their predictions of forward sales volumes. These factors are an analysis of past sales volumes, general business conditions, competition, trends in customer demand, and any significant changes in corporate merchandising policies. The conclusions drawn from this analysis are used to formulate the expected sales volume for the coming budgetary period.

3.3.3 Budgeting for Inventories

Once the sales volumes for a store have been forecast, the inventory budgets are normally prepared. Arnold et al. (1983) have suggested that inventory budgeting has three objectives. These are the satisfaction of expected consumer demand, the meeting of seasonal demand by the variation of inventory investment levels, and the achievement of inventory turnover rates that allow corporate objectives to be attained. Davidson et al. (1984) have identified five commonly used methods for

planning future inventory levels, these being:

  personal judgement;

  the safety stock method;

  the percentage variation method;

  the week's supply method;

  the stock to sales ratio method.

Each of these methods uses the sales budget as a base.

The system of personal judgement is simply an estimation of what inventory levels are required to meet the merchandising objectives. The final budget is therefore primarily based on intuition and past experience. The safety stock method is implemented using the monthly sales forecast and then adding to this a safety stock allowance. This allowance is intended to cover for "unforeseen" sales fluctuations and delivery delays. Normally this method is adopted for those merchandising categories where sales are relatively stable. The percentage variation method is aimed at generating low fluctuations in inventory levels even when major variations in sales volumes are forecast to occur. This outcome is derived by using a formula approach when finalising the inventory budget. The formula used incorporates only a certain fraction (e.g. 1/5) of the estimated percentage deviation from average stock when calculating the planned inventory levels. The week's supply method assumes that inventory levels should always be directly proportionate to sales. It is based on a trading cycle of one week, and consequently the merchandise budget must be divided into weekly time frames to enable the method to be used. In addition, when this method is used, the company must decide on

the number of weeks of stock that each responsibility centre
should carry at any one time. This information is then used to
calculate the desired inventory levels, based on the previously
established sales budgets. The stock to sales ratio method is
based on the theory that, to support a projected sales volume,
a certain level of stock must be maintained. This stock level
is in the form of a fixed relationship to sales. The major
difficulty with the application of this method is that where
sales fluctuate dramatically, it is not easy to attain the
desired sales/stock ratios because of the logistical problems
of moving from low to high volume selling periods, and vice-
versa. Such movements can occur over a very short period of
time (e.g. commencement of school holidays).

3.3.4 Budgeting for Planned Reductions

Planned reductions take the form of markdowns, anticipated
stock shortages, and any discounts that are allowed to
privileged purchasers. Markdowns are used to lower the retail
price of merchandise to achieve desired sales levels or to
clear excess stock. They may be necessary either because the
merchandise was initially overpriced, or obsolescence has
occurred. Actual stock shortages can be caused by staff or
customer theft or by short deliveries from suppliers, while
theoretical stock shortages may arise from faulty information
being included in merchandising records. Stock shortages or
shrinkage, as it is commonly called, is a major problem for
retailers. Both Birnbaum (1982) and Schulman (1979) have
suggested that failure by a retailer to properly control

inventories can cause profits to be significantly or completely eroded in a trading period.

Berman and Evans (1989) have noted that a number of different factors are normally taken into account when a planned reductions budget is being finalised. Such factors include past experience, markdown history for similar retail operations, recent changes to corporate procedures, probability of stock being made obsolete in a coming trading period, anticipated price trends, and any expected stock shortages.

3.3.5 Budgeting for Purchases

With the reductions budget finalised, a retailer normally commences the preparation of the purchases budget (Duncan and Hollander, 1977). With the preceding plans (i.e. sales, reductions) completed, the calculation of purchases becomes a procedural exercise. Planned purchases equal planned sales less opening stock plus planned reductions plus budgeted closing stock. Each of these components is expressed in retail values. It is this planned purchases figure that forms the basis of the OTB system (Shipp, 1985).

3.3.6 Budgeting for Markups

The final step in the merchandise budgetary process is the formulation of the markup budget. A markup is the difference between merchandise cost and the marked retail price (Duncan and Hollander, 1977). As with the other components of the merchandise budget, the markup budget is normally prepared by the various merchandise responsibility centres. The sum of the

markup budgets comprises the corporate markup budget. It is this corporate markup that must cover the expected expenses of the business and at the same time return to the owners the desired rate of return on funds invested (Markin, 1977). The markup budget is an important tool for each responsibility centre since, in essence, it sets a markup goal that should be pursued when merchandise is being procured for the company.

3.3.7 Decision Making Sequence

Input to the budgetary process may be primarily sourced from either the top or bottom organisational levels. Top level input originates at senior manager level, namely merchandise manager level and above, while bottom level input is provided by buyers or merchandise department heads. These two approaches generate what is termed as the "top down" or the bottom up" approach (Spohn and Allen, 1977).

The top down approach is often used when the organisational structure is centralised. Forecasts of sales and other key budgetary items are made by senior management and these are then divided between the relevant responsibility centres of the company. The allocations made are not normally reversible but, as Spohn and Allen (1977) have stated, alterations to the allocations can occur as a result of negotiations between the interested parties. These negotiations often rest on the principles of debate supported by a well researched analysis of expected merchandising conditions.

The bottom up approach is almost the reverse of the top down

approach. This process requires lower level managers to provide the budget input. This input is then collated at higher levels and the corporate budget established. This style also allows changes to be made to initial budgets established. These are often initiated when higher level managers consider that the budget estimates are unrealistic given the expected environmental conditions for the coming budgetary period.

Rackman (1975) has suggested that, in addition to the above approaches, an all levels process may be used. This is a compromise between the other two approaches and its success depends on the principles of reason and communication. This approach is dependent on higher level management providing budgeting staff with a budget guide that specifies what they consider is a reasonable budget to be achieved, taking into account expected environmental conditions. This latter information is provided to staff before budgeting commences. Budgeting staff then prepare detailed budgets for their respective responsibility centres which are passed back to higher level management for review and approval. If any alterations are considered desirable, these are made only after communication and negotiations have occurred between all interest groups.

3.4   The Open-To-Buy System as a Means of Control

The purpose of the OTB system is to control purchases so that inventories are maintained at the levels planned for in the merchandise budget (Lewison and DeLozier, 1986; Marquardt et

al., 1983). This objective is consistent with the generally agreed retailers' objective which was outlined in the previous section, namely to achieve a balanced relationship between investment in inventory and the fulfilment of customer wants. The OTB system thus concentrates on inventory investment and seeks to provide control in this critical area in an effort to attain optimal profitability.

As previously discussed, the term OTB means the amount of inventory that a retailer can buy during a specified time period without exceeding the budgeted purchases level as established in the merchandise budget (Arnold et al., 1983). The OTB system can be used for both dollar and unit control of inventory. If the system is used for dollar control, it calculates how much money a buyer can spend on merchandise in a given period. If, on the other hand, the OTB system is used for unit control, then the system will generate information that determines how many units of merchandise may be purchased in the period under consideration. Normally, the OTB system is only used for unit control in relation to inventories of staple merchandise (Lewison and DeLozier, 1986). Since the dollar OTB method is more widely used, this Thesis concentrates on this variation.

The formula used to calculate the dollar OTB is:

OTB = budgeted closing stock

+ budgeted sales

+ budgeted reductions

- opening inventory

- purchases already received

- purchase orders placed but not yet received.

The variables (i.e. sales, inventories, etc.) initially will be derived from the merchandising budget but, once a trading season commences, the opening inventory figure will be updated by the flows of merchandise that have occurred since the last OTB report (Huth and Norcott, 1982). These flows encompass sales, purchases and reductions. Some retailers, however, do not include price reductions in this updating process. As Moscarello et al. (1976) have noted, while a buyer can be penalised to the extent of such reductions being excluded, this practice may be dangerous in that it may lead to an understocked situation. This occurs because, by excluding reductions, the OTB balance is retarded by the amount of the reductions. Also, should any deficiency in meeting the sales budget occur in a given period, this will be automatically incorporated into the OTB calculation. The effect of this is to reduce the available OTB balance.

A "systems" difficulty of the OTB model is that it includes values for both sales and purchases. In practice, sales values are normally at retail while purchases are at cost. For a

given item of merchandise, the difference between the two is the budgeted markup. For the OTB to function, all variables need to be expressed in a common level of measurement, that is either cost or retail. This has created an option for retailers in that the system can be implemented using either cost or retail values. Mason and Mayer (1987) have suggested, however, that the OTB system based on retail values is the more prevalent of the alternatives. For this variation to operate, all purchases and inventories must be valued at retail.

The "cost-based" OTB system is derived from the OTB "retail" model. This occurs because the OTB balance at cost is calculated using the complement of the budgeted markup percentage for the merchandise group under consideration. This budgeted markup percentage is designed to generate sufficient initial profit margins to cover the expenses, reductions and profit requirements of the company. It is expressed as an expected average contribution from the merchandise category as a whole rather than the markup required from every item of inventory within that department (Marquardt et al., 1983).

There are two major assumptions in the OTB model. First, there is an assumption that the merchandise budget, set for the trading period in question, is reasonably accurate in terms of expected sales volume and markup percentage. If these factors are inaccurate, this will impact on the accuracy of the figures for purchases and reductions. The potential damage that such inaccuracies may cause to a retailing business are well documented in the retailing literature. In recognition of

these potential problems, writers such as Mason and Mayer (1987) have suggested that OTB figures should be used as a guide only, and that merchandising commonsense should prevail. Second, if the system is to report on a cost basis, the initial markup percentage is assumed to reflect reality. This figure, however, could be "massaged" by the motives of the person responsible for setting it (a form of budget slack), and so the markup budget established could be either optimistic or conservative. Since the notion of budgetary slack is valid in this context, outcomes similar to those described in section 2.4.6 could be expected. In brief, these outcomes centred around the understatement of forecast revenues and/or the overstatement of associated expenses.

The implicit worth of any control system is contained in the value of the feedback given to users (Anthony and Dearden, 1988). Value in this context can be determined by the potential quality of the actions taken in response to the information received. Feedback from an OTB system will always be divided into one of three categories:

   i)   OTB limit at budgeted level;

  ii)   OTB limit overspent;

 iii)   OTB limit underspent.

The worth of the OTB system to any company will be reflected in the actions taken in response to each of these situations. The situation where the OTB is neither overspent nor underspent is obviously rare, but this is not the case for the other two possibilities. Davidson and Doody (1988) together with Richert et al. (1974) have argued that the ideal situation is when the

OTB is underspent and so there are funds available for future spending. Such a position enables purchasing to continue, and so provides scope for a buyer to take advantage of special deals that may be offered by suppliers. This situation therefore permits a constant stream of new merchandise to flow and so helps keep ongoing consumer interest stimulated in the total merchandise offered for sale. An underspent position, however, can generate a negative outcome. This occurs when insufficent levels of inventory are available and so ongoing sales volumes are adversely affected with a flow-on effect to profitability (Bearchell, 1975).

An overspent situation almost always represents negative feedback to a buyer. Perhaps the only time when an overspent situation is not "unwelcome" feedback is when it is planned, with the purpose of taking advantage of unique market opportunities (Mason and Mayer, 1987). If an overspent OTB position is not planned and it is considered necessary to correct it, action may include marking down slow moving merchandise, cancelling orders, deferring deliveries of incoming merchandise, seeking an increase to the closing inventory budget as a response to an improving market, or seeking an upward revision of the ongoing sales budget if an intensive sales campaign is planned (Davidson and Doody, 1988).

The OTB system has three significant strengths that are relative to the merchandising objectives of a retailer. First, the system works to keep inventory procurement within budget. It is essentially aiming to achieve a predetermined

relationship between investment in inventory and sales turnover. Second, the output of the system can provide continual control feedback to those personnel in the company responsible for the purchasing of merchandise (normally titled buyers). Since an essential requirement of feedback is that it is timely, it is a strength of the OTB system that feedback can occur continually if desired (Welsh, 1988). Third, the output from the system highlights any dollar changes that need to be made to forward purchasing plans as a result of events occurring in the last reporting period, such as failure to achieve the sales budget (Berman and Evans, 1989).

The system is not, however, without its weaknesses. First, the maintenance of purchases within OTB dollar limits will not guarantee a balanced stockholding. The term "balanced stock" means that "the inventory assortment breadth must be adequate to meet the needs and wants of customers and that the stock depth behind each of the assortment factors should be reasonably in line with the relative rates of sale by such factors" (Davidson et al., 1984, p. 294). Second, a strict application of the method can restrict the trading options of a buyer. If a buyer decides not to purchase stock that it is believed will incrementally add to corporate profits, solely because OTB limits would be exceeded, then it must be reasoned that dysfunctional decision making is occurring. Third, the model adjusts the available OTB using historical data only and thus ignores any long-term upward or downward trends that may be developing. Mason and Mayer (1987) and Gilberg (1984) have suggested that this difficulty may be overcome by management

adjusting sales budgets and closing inventory budgets periodically within the budget period. Mason and Mayer (1987) have also suggested that, while this practice is common in the situation of surging sales, it is normally based on management subjectivity or buyer persuasiveness rather than on more formal forecasting methods. This situation could thus enable adjustments to be made that are based more on optimism than factual trading opportunities. By way of contrast however, there is, little evidence in the retailing literature to suggest that sales budgets are decreased, and thus OTB reduced, when a continuing downward trend in sales volume is expected. It can be argued, therefore, that retailers do not apply common logic to the two situations. Indeed, the practices outlined indicate that while retailers appear to be willing to embrace signs of potential escalations in sales, they seem reluctant to incorporate similar signals of a negative nature in their control systems.

3.5 Comparison of Merchandising Performance with Budget Plans

3.5.1 Introduction

To enable judgements to be made on the success or otherwise of the merchandising attainments for a particular season, actual profit performance needs to be compared to the budgets that were previously prepared. This comparison enables judgements to be made regarding employee performance and, in some cases, on the feasibility of the budgets originally prepared (McGinnis et al., 1984). For this to be undertaken, a retailer needs to have an accurate valuation, at cost, of the inventory on hand.

Without this valuation, it is impossible to derive the cost of goods sold, gross margin, or inventory turnover information (Markin, 1977).

There are two main approaches to inventory valuation in retailing for external reporting purposes, these being the cost method and the RIM (Lewison and De Lozier, 1986). The cost method requires that a retailer value merchandise at the lower of cost or market value. There are a number of alternative methods within the parameters of this method and these include the specific identification, weighted average cost, first-in-first-out (FIFO), and standard cost methods (Statement of Accounting Standards Valuation and Presentation of Inventories in the Context of the Historical Cost System) (AAS2). The last-in-first-out (LIFO) method is also used frequently, but principally outside Australia since this usage is not permitted by either the accounting profession or the taxation authorities in this country. The RIM initially values inventory at retail but, before gross profit can be calculated, the retail value of the merchandise needs to be converted to cost. This process is achieved by using a percentage relationship between the cost of inventory purchased and the subsequent retail value. This method allows the retailer to estimate the cost value of ending inventory without the necessity of taking a physical count of inventory. As Corcoran (1986) has noted, this method has been widely used for most of this century and is typically used by department stores to control inventories consisting of 100,000 or more items. The detailed methodology for this method will

be discussed later in the Chapter. This Thesis addresses the
RIM only.

3.5.2 **Methodology of the Retail Inventory Method of Valuation**

Mason and Mayer (1987) and others have suggested that there are
five principal steps involved in the valuation of inventory
using the retail method. These steps are:

   i)   the determination of the valuation of merchandise
        handled at both cost and retail values;

  ii)   the calculation of the cumulative markup percentage
        and cost multiplier;

 iii)   the computation at retail value of all deductions from
        stock;

  iv)   the determination of closing inventory (both
        theoretical and actual) at retail value;

   v)   the application of the cost percentage to the closing
        inventory.

The determination of merchandise handled commences with the
closing inventory of the previous measurement period.
Normally, this inventory is divided between each of the various
merchandise responsibility centres in a store, and is measured
at both cost and retail. The balance of merchandise handled is
derived from the purchases of inventory made during the course
of a trading period. These purchases are also recorded at both
cost and retail. The calculation of the cumulative markup
percentage and cost multiplier occurs after the valuation of
merchandise handled has been finalised. The cost multiplier is
derived by dividing the total dollars handled at cost by the

total at retail.   The cumulative markup percentage is the complement of the cost multiplier.   These calculations form the basis for adjusting the retail value of the closing inventory to a cost value equivalent (Redinbaugh, 1976).

The computation, at retail value, of all deductions from stock requires that the total deductions from the merchandise available for sale during the trading period, be established. These deductions include sales, markdowns, discounts, and stock shortages.   These calculations are important since, if they are not done, the theoretical value of the closing stock cannot be established (Davidson et al., 1984).

The determination of the theoretical retail value of closing inventory is derived by subtracting the deductions (at retail) from the retail value of all merchandise handled.   The actual retail value of closing inventory does not depend on this method of derivation but rather on a stock count being undertaken.   Once the retail value of merchandise held has been established, it is converted to a cost valuation using the cost multiplier.

While the above overview of the methodology of the RIM may indicate that the methodology is "cut and dried", an examination of the retailing literature shows that in fact a number of variations exist within the formal structure of the method.   Principally, differences occur in the methodology used to determine the cost valuation of inventory on hand at the end of a trading period.   As Davidson et al. (1981) have commented,

virtually all the confusion about RIM revolves around the
derivation of the cost multiplier. Although the variations may
be slightly different numerically, such a situation should not
lead to a conclusion that the differences are not material.

A search of the retailing and accounting literature has
indicated that there are six main variations of the RIM. Each
method depends on the methodology discussed earlier, with the
differences occurring in the derivation of the cost multiplier.
These methods will now be discussed with a view to isolating
the major differences. This is necessary because the empirical
research undertaken in this thesis will concentrate on these
differences in order to test the stated hypotheses. The
following data model is used in order to identify the
differences between the identified variations of the RIM.

	Cost	Retail
Opening Stock	$110,000	$200,000
Net Purchases	610,000	1,000,000
Additional Markups		160,000
Markup Cancellations		(110,000)
Markdowns		(150,000)
Markdown Cancellations		20,000
Sales		(720,000)
Closing Stock at Retail		$400,000

i) **Method One**

Buckley and Lightner (1973) have commented that this first
method approximates a replacement cost valuation of inventory.

The methodology is as follows:

	Cost	Retail	Cost Multiplier
Opening Stock	$110,000	$200,000	
Net Purchases	610,000	1,000,000	
Goods Avail. for Sale	$720,000	$1,200,000	.600

The cost value of closing stock using this method is $240,000 ($400,000 * .6). The cost multiplier is derived by dividing the cost value, of the goods available for sale, by the retail value.

Although inwards freight costs are included in net purchases, it will be noted that additional markups or markdowns are not included in the calculation of the cost multiplier. This method thus rests on the assumption that all selling price adjustments only relate to units sold. Davidson et al. (1984) have argued that this assumption is not valid and, in doing so, have used movement of goods theory and price setting as supporting evidence.

ii) Method Two

	Cost	Retail	Cost Multiplier
Opening Stock	$110,000	$200,000	
Net Purchases	610,000	1,000,000	
Addit. Markups		160,000	
Goods Avail. for Sale	$720,000	$1,360,000	.529

The cost value of closing stock under this method is $211,600 ($400,000 * .529).

The difference between this method and the previous is that additional markups are included in the calculation of the cost multiplier. Additional markups occur when market prices increase and so the retail prices of merchandise are adjusted upwards (Gist, 1968). Davidson et al. (1981) have argued that this method is the most conservative of all the RIM variations. In effect, this method values inventory lower than the "lower of cost or market value" concept.

This variation, however, is dependent on several key assumptions. First, it must be assumed that the reasoning supporting the additional markups was sound, and therefore, the markups processed were a true reflection of market forces at the time they were taken. If this assumption cannot be made, then it is likely that closing inventory values and gross profit will be understated. Thus, off-balance sheet reserves will be created whether this was the intention or not.

Second, this method assumes that markdowns or reductions in markups are only taken in recognition of merchandise or product obsolescence that cause a permanent reduction in merchandise value. There is no allowance in the method for additional markups being reversed because these additional markups included a "degree of merchandising optimism". Again, if this assumption cannot be upheld, there is a strong probability that both closing stock values and gross profit levels will not reflect reality.

iii) Method Three

	Cost	Retail	Cost Multiplier
Opening Stock	$110,000	$200,000	
Net Purchases	610,000	1,000,000	
Addit. Markups		160,000	
Markup Cancellations		(110,000)	
Goods Avail. for Sale	$720,000	$1,250,000	.576

The cost value of closing inventory is $230,400 ($400,000 *
.576).

This method differs from Method Two in that it includes markup
cancellations in the calculation of the cost multiplier.
Markup cancellations are reversals of additional markups
(Jones, 1957). Gist (1968) and others have argued that this
method is the one most frequently used by retailers since it
generates a valuation of inventory that approximates the lower
of cost or market value. Although the application of this
method results in inventory values at cost that are higher than
Method Two, it is still largely dependent on the assumptions
stated for the previous method. Again, there is no attempt to
separate markdowns resulting from incorrect initial markups,
from those that relate to genuine reductions in the value of
merchandise after the initial markups are taken. It can be
argued that, in terms of the lower of cost or market rule, this
is illogical. Additional markups often occur because initial
prices were originally set too low, and thus prices are
adjusted upwards to levels that are perceived to be more
correct when taking into account market conditions (Jones,

1957). It can be further argued that, if prices can be adjusted upwards to meet favourable market conditions, then those same prices should be reduced if market conditions are worse than initially expected. If these reductions can be justified then the effect of such an outcome (i.e. all markdowns and not just markup cancellations) should be included in the calculation of the cost multiplier.

The application of this method also preserves the original cost multiplier of any marked down merchandise that is held in stock at the end of a trading season. Thus, when that stock is sold in a subsequent period, the original profit margin will be attained. The effect of the reduction in merchandise value is therefore incorporated into the trading results of the period in which the markdown is taken. The advantage of such an outcome is that the trading results for a responsibility centre will be immediately affected, and therefore, no flow-on effects will occur in subsequent periods. The main disadvantage is that merchandise may become valued at a figure lower than cost or market value even in situations where no permanent reductions in value have occurred.

iv) Method Four

	Cost	Retail	Cost Multiplier
Opening Stock	$110,000	$200,000	
Net Purchases	610,000	1,000,000	
Addit. Markups		160,000	
Markup Cancellations		(110,000)	
Markdowns		(150,000)	
Markdown Cancell.		20,000	
Goods Avail. for Sale	$720,000	$1,120,000	.643

The cost value of closing stock is $257,200 ($400,000 * .643).

The method assumes that markdowns and markdown cancellations are equally likely to apply to units sold and units held in closing stock. It also assumes that sales are in proportion to both opening stock and purchases. It supports the notion that retailers make no concerted effort to quit aging stocks, and therefore, sales of old stock are assumed to continue in the same pattern as recently acquired merchandise. Lewison and De Lozier (1986) have argued that such an assumption is contrary to normal retailing practice.

Although a valuation approximating replacement cost is generated, the methodology can also be extended in order to allow for a valuation representing lower of cost or market value to occur. For this outcome to be attained the methodology under Method Four is first applied. Deductions are then made from the derived cost value of merchandise for any stock items where retail values have been reduced below

original cost.

There are, however, several difficulties that emerge if this methodology is extended to cater for the lower of cost or market value concept. First, it makes no allowance for the retention of the original cost multiplier within the valuation of the closing inventory. This method thus fails to recognise fully the effect of markup targets not being achieved in any one trading season. It, therefore, potentially complicates any measurement of work performance that may be desirable. Second, the application of this extended methodology assumes that original cost information is readily available for all items of stock. This information would be needed for the comparative work to be undertaken between original costs and marked down retail values. As Markin (1977) has suggested, this information is not often readily available since retailers that implement the RIM do so in order to simplify stocktaking, and in particular, to eliminate the requirement to track each item of stock.

v) Method Five

This method is based on the first-in-first-out principle. It assumes that the merchandise encompassing the closing stock was all purchased in the current trading period (Clift, 1982). It is argued that the validity of this assumption could be challenged on the grounds that such inventory flows would not be the "norm" in the retail industry. The methodology for

calculating the cost value of closing stock is:

	Cost	Retail	Cost Multiplier
Net Purchases	610,000	1,000,000	
Addit. Markups		160,000	
Markup Cancellations		(110,000)	
Markdowns		(150,000)	
Markdown Cancell.		20,000	
Goods Avail. for Sale	$610,000	$920,000	.663

The cost value of closing stock is $265,220 ($400,000 * .663).

vi) Method Six

This method is a variation of Method Four, and consequently, attempts to split the markdowns taken between merchandise sold and inventory on hand at the end of the trading period (Colditz et al., 1988).

The methodology is:

	Cost	Retail	Cost Multiplier
Opening Stock	$110,000	$200,000	
Net Purchases	610,000	1,000,000	
Net Markups		50,000	
Subtotal	720,000	1,250,000	
Less:			
Markdowns on unsold inventory		(100,000)	
Goods Avail. For Sale	$720,000	$1,150,000	.626
Less:			
Sales		(720,000)	
Markdowns on sold inventory		(30,000)	
Ending Inventory at Retail		$400,000	

Ending inventory at cost equals $250,400 ($400,000 * .626).

This method seeks to overcome the assumption of Method Four that markdowns are equally likely to apply to units sold and those held in closing stock. The procedure used to achieve

this objective is to allocate markdowns into one of the two categories. As a result, the method does not maintain initial markup levels in closing stock, and it is therefore likely that an accurate measurement of buying performance may be hindered. It should be noted that net markdowns on unsold inventory are deducted from the gross retail value of goods available for sale. This is justified on the grounds that the markdown is a downward adjustment of the initial markup, and represents an alteration to the average markup of inventory handled during the trading season.

3.5.3 Summary of the Outcomes Generated by each Method Discussed

The various financial outcomes generated in the methods discussed are as follows:

Method	Ending Inventory Valuation at Cost
One	$240,000
Two	211,600
Three	230,400
Four	257,200
Five	265,220
Six	250,400

In summary, the maximum outcome generated is $265,220 while the minimum is $211,600, a difference of 25.34%. It is suggested that the above valuations give support to the statements offered by Davidson et al. (1981) that, although the cost multiplier numerical variations may be slight between the different models, the dollar differences derived can be

material. This has been illustrated in this example where the difference is $53,620.

3.5.4 Strengths of the Retail Inventory Method

Writers have identified a number of strengths that the RIM offers to retailers. First, it simplifies the stocktaking process and thus makes it a less expensive exercise to undertake than would otherwise be the case (Berman and Evans, 1989; Lewison and De Lozier, 1986). When stocks are counted, it is the retail values that are recorded on the stocksheets and not the cost values, which is the reverse of the procedure for other methods. This also means that stocktakes can occur on a staggered basis with stocks being counted in different departments on different days (Marquardt et al., 1983). Second, the method enables operating results to be derived without having to count physical stock (Clift, 1982; Duncan and Hollander, 1977). Since inventory is theoretically valued on a continuing basis, this means that gross profit estimates can be derived at frequent intervals, if this is required by the store. Third, it provides a basis for calculating stock shortages (Redinbaugh, 1976; Jones, 1957). These shortages may occur either as a result of customer and employee dishonesty, or because of poor inventory accounting. The benefit of these calculations is that management is provided with information concerning shortages on the basis of merchandise classification, thus enabling corrective action to be targeted. Fourth, it generally yields a conservative valuation of stock (Markin, 1977; Gist, 1968). This outcome is normally acceptable to professional accounting bodies (such as The

Australian Society of Accountants and the Institute of
Chartered Accountants in Australia) and to taxation
authorities. Fifth, the method provides information suitable
for use by insurance companies (Davidson and Doody, 1966;
Marquardt et al., 1983). This information is used to establish
insurance cover for merchandise carried and to give assistance
in determining the extent of any insurable losses that may
occur. Sixth, it provides a basis for controlling resources by
merchandise category. This benefit becomes particularly
significant when a company decides to structure and assess its
business by responsibility centre (Duncan and Hollander, 1977;
Marquardt et al., 1983).

3.5.5. Weaknesses of the Retail Inventory Method

There have been a number of weaknesses identified with the use
of the RIM. First, the method is based on averages (Mason and
Mayer, 1987; Berman and Evans, 1989). It would thus be highly
unlikely that the method would produce a cost valuation
identical to that which would be produced under the cost method
of inventory valuation (Jones, 1957). This is because the cost
complement is derived from the total merchandise handled for
the period, using the total cost and total retail value of that
merchandise. Second, it requires great care in recording price
changes and inventory movements (Duncan and Hollander, 1977;
Bunton and Sycamore, 1982). If errors occur in the record
keeping, the accuracy of inventory valuation figures and
operational information will be affected. Third, Redinbaugh
(1976) has commented that such an elaborate record keeping
system may be costly for a number of companies. This viewpoint

is supported by Markin (1977) who has argued that smaller
companies often do not use this method because the costs
involved exceed the benefits. Fourth, the method is dependent
on markups being constant during the period for both goods sold
and those held in closing stocks (Moscarello et al., 1976;
Shipp, 1985). As Clift (1982) has noted, the method may be
unsuitable for use in those merchandise responsibility centres
where there are wide differences in stock turnover rates
between a number of merchandise groupings. Fifth, it has a
number of variations available (Davidson et al., 1981). Each
variation is based on certain assumptions, and output accuracy
is dependent on the method used being matched with the
appropriate situation. If this is not done, the output
generated may be materially different to that which would be
expected if a more appropriate method was applied. Sixth, the
method is applicable only in those situations where the retail
value of incoming shipments can be determined at the time the
merchandise is received by the company (Davidson and Doody,
1988). This requirement precludes the method being usable in
certain retailing operations, such as bakeries and optometry
departments (Redinbaugh, 1976). Seventh, it does not easily
incorporate supplier rebates, earned in earlier trading
periods, into the results of the relevant measurement period
(Berman and Evans, 1989). The failure to include these rebates
in the cost multiplier calculation may materially alter the
accuracy of the output information generated by the system.
Eighth, the method can pose operational problems because it is
not easily understood (Markin, 1977). The factors most
frequently misunderstood include the mathematical relationships

within the model, and the variations of the basic model that are available to be used.

3.6 Performance Appraisal Based on the OTB System and the RIM

An assessment of whether the OTB system operates in a way that is conducive to employee appraisal centres on two key components of the system. These are, first, the accuracy of the sales budget as a forecast of future trading capabilities, and second, the realism of the markup figure used to reduce retail values to cost. The prime data used for input to the OTB system is the sales budget. As was noted earlier in this Chapter, a corporate sales budget can be either optimistic or pessimistic when compared to the environment actually experienced. Given this situation, there is a case for adjusting OTB limits as changes in the environment become apparent during a trading season. While adjustments are made within the "traditional" OTB system, as was pointed out in section 3.4, such adjustments are based on deviations from budget for one time span only. There is no suggestion in the literature that trend developments are formally incorporated into the OTB system. If these deviations represent a continuing trend, and they occur at the start of a trading season, then the cumulative effect could be substantial. It can be hypothesised that such an omission can cause the OTB figure to be founded on an erroneous ongoing trading pattern. This can have the effect of causing onward profitability to fall below attainable levels if not arrested.

Two situations can cause this suboptimisation of profitability. First, there is the situation where sales are expanding at a rate in excess of the sales budget. For this increase to be sustained, sufficient inventories will be needed to service the increase in consumer demand. If the OTB limit is increased at the rate of one time span deviation only, increases in inventory will lag sales increases. Thus, for sales momentum to be maintained, stockturn will need to be increased. Such a situation may not be a material problem for those merchandise categories that are able to source inventories quickly, but for those categories that cannot do so, the cumulative effect may cause a severe constraint on sales and consequently on profits (Bearchell, 1975). Second, there is the case where sales are occurring at a rate less than that stipulated in the sales budget. If purchasing is based on OTB limits, excess inventories will be purchased. This will have the effect of decreasing both stockturn and the return on funds invested in inventory. This will also reduce ongoing OTB and, as Huth and Northcott (1982) have suggested, this could mean that increased levels of markdowns must be taken to clear merchandise. It can be argued that if this downward trend continues throughout a trading season, the final effect on sales and profitability may be severe because of the compounding effect of continually having to clear unneeded merchandise.

The second key component of the OTB system is the budgeted markup figure. This figure is used to adjust retail values to cost equivalents and, for the reasons given in section 3.4, could reflect an optimistic point of view. If the markup

figure used is materially different to that which should have been used, given a perfect knowledge of forward market conditions, then it can be argued that a material adjustment to available OTB may occur. Again, this outcome may cause profits or sales to be suboptimised and budget variances created.

It is argued that any negative effects generated by the above two components of the OTB system could cause an unfavourable budget performance assessment for a buyer from a superior officer of the company. This assessment could arise because budgets are not attained. These budgets may include sales, gross profit rate, gross profit dollars, and inventory dollars. As Lewison and De Lozier (1986) have stated, buyers are frequently paid bonuses for the achievement of these budgets. Further evidence of this is included in Table 4.10. An extension of the expectancy theory (Vroom, 1964) suggests that if bonuses or other rewards are not paid, and the buyer believes the budget variances are caused by factors outside his or her control, employee motivation will be reduced. As Schermerhorn et al. (1982) have stated, this outcome could lead to a higher level of employee turnover within the company, thus reducing corporate profitability even further.

It is considered that the major problems with the use of the RIM as a basis for performance evaluation are, first, the difficulty of matching the appropriate RIM methodology with the merchandise flows that occur within a measurement period, and second, the identification of true markdowns. The available evidence suggests that the method most commonly adopted by

retailers is justified almost solely on the grounds of
conservatism. This method values inventory at the lower of
cost or market value while still maintaining initial margins.
It seems more than a coincidence that this same method is also
endorsed for external reporting purposes by professional
accounting bodies (see, for example, Australian Statement of
Accounting Standards AAS2). There is little suggestion in the
available literature that retailers use one method for external
reporting and a combination of methods for internal or employee
assessment purposes. It is reasoned that inventory movement
patterns within merchandise categories will differ, and
therefore, other methodological variations of the RIM may
provide a more accurate assessment of employee performance.
These differing inventory movement patterns may occur through
varied stockturn rates or differing percentages of "old"
merchandise (i.e. more than one season old) carried through
from one season to another. This situation may occur, for
example, when a company authorises specific merchandise
categories to carry "left-over" summer season merchandise to
the next summer trading period. The failure to separate
markdowns that relate to changing market conditions, or the
correction of buyer pricing optimism from those made in
recognition of inventory obsolescence, could also affect the
performance appraisal of a buyer. As was argued in section
3.5.1, the failure to include these markdowns in the
calculation of the cost multiplier is illogical. It is
suggested that, if these markdowns are included, a more
accurate assessment of a buyer will occur. While it is
acknowledged that ending inventories are a minor segment of the

total inventory available for sale during a trading season, it is argued that in the above situations the results generated by the adoption of the "correct" method could be material if compared to the output from the more conservative model. In conclusion, it is suggested that as a result of the foregoing arguments, if a company uses both the RIM and the OTB system, the total effect on the performance assessment of a buyer may be serious.

As noted in the first Chapter, this Thesis seeks to examine the "systems" effect on sales and profit optimisation, and how this outcome affects potential buyer performance appraisal. It is suggested that, under certain merchandising conditions, these negative outcomes may be material at both corporate and employee level. It is hypothesised in this Thesis that the OTB system may not allow profits or sales to be maximised. It is further considered that the RIM that values inventory at the lower of cost or market value while still maintaining initial margins, does not always allow an accurate measurement of profits and inventory values suitable for employee assessment purposes. This total situation, it is argued, may therefore generate an outcome that could materially affect an employer's appraisal of a merchandise employee's performance.

3.7 Summary

This Chapter has discussed budgetary control systems in a department store operation. It commenced by discussing the concept of control and the segmentation of control in a typical

store structure. Budgetary control systems were defined as
having two components - merchandise control systems and cost
control systems. Merchandise control systems concentrate on
the buying and selling of stock while cost control systems
address the control of functional expenses. It was stated that
this Thesis examines only merchandise control systems.

The budgetary control process of a retailer was then outlined.
Attention was focused on the methods used to prepare sales,
inventory, planned reductions, purchases, and markup budgets.
A discussion of the decision-making sequence contrasted the
"top down" and "bottom up" approaches, and it was suggested
that a combination of these methods is sometimes used.

The study of the merchandise control system was expanded into
an examination of the OTB as a sub-system of the total system.
The OTB system seeks to maintain the desired sales/inventory
investment relationship for a company. The assumptions of the
system and its strengths and weaknesses were discussed. The
feedback possibilities from an application of the OTB were also
outlined together with the possible management responses to
each of these outcomes.

An examination was then undertaken of the various methods of
valuing inventory in a retail store. It was considered that
merchandising profit cannot be derived unless inventory on hand
at the time of measurement, is valued at cost. Both the cost
and retail methods were discussed. Since this Thesis
concentrates on the retail method, only a brief overview of the

cost method was provided. Six variations of the retail method were outlined and the assumptions underlying each variation identified. This part of the Chapter concluded with a discussion of the strengths and weaknesses of the retail method.

The final section presented some theoretical arguments as to why the application of both the OTB system and the RIM may hinder accurate employee appraisal. For the OTB system, discussion centred on the methodology of the system itself, while for the RIM, argument was based on the need to match method with inventory flows. The analysis concluded with a suggested hypothesis that if the OTB system and the RIM are combined, the outcome generated could affect an employer's appraisal of a merchandise employee's performance.

This Chapter has provided the final part of the theoretical support needed for the first stage of the empirical work to be undertaken. The methods to be used and the initial conclusions drawn will be discussed in the next Chapter.

Chapter Four

Merchandise Control Systems in Australian Companies

4.1 Introduction

While it is apparent from the literature that the use of the OTB system and the RIM is widespread, there is no evidence available that clearly outlines the extent of their use in Australia. Since this Thesis is concerned with the effect of both the OTB system and the RIM on the performance appraisal of Australian merchandising employees, it was considered necessary that this evidence be collected.

4.2 Retail Store Operators in Australia

As it was clear from the retailing literature (e.g. Lewison and DeLozier, 1986) that it is the non-food department store operators who are the predominant users of both the OTB and the RIM, it was decided to compile a list of Australian companies that operate department stores. The companies were selected from the following sources:

   i)   Australian Associated Stock Exchange retail listing as at June 30 1984; sub classification numbers: 171, 172, 173.

   ii) Business Who's Who of Australia, (19th Edition, Dominion Press, Victoria, 1985); classification headings: Department/Chain Stores, Retail Trade - General Merchandise, Retail Trade - Apparel & Accessories.

iii) Key Business Directory of Australia, Annual Vols 28-30,

Volume 1 and 2; Dun & Bradstreet, 1983-85,

classification numbers: 5311 (Retail Department Stores),

5331 (Retail Variety Stores).

The above sources generated an initial list of 176 companies. Included in this list, however, were companies trading predominantly in the food or fuel merchandise categories. These companies were deleted. In general, subsidiaries of other companies on the list were also excluded in order to avoid any element of double counting. There were several exceptions to this and these arose where the companies (i.e. holding company and subsidiary) traded in separate market segments, such as the traditional department store sector and the discount department store sector. These exceptions were justified on the grounds that a discount department store is arguably quite a different style of operation to the traditional department store. The discount store generally seeks to concentrate on a marketing strategy of low price/high volume, while the traditional department store uses a strategy that seeks to balance a wide product range with service and quality.

Those companies remaining on the list were then verified as department store traders. This verification was undertaken using information included in company financial statements, The Business Who's Who (19th ed), Jobson's Year Book of Public Companies 1984, and the Key Business Directory of Australia (Vols 28 -30). After this exercise was completed, the final

list comprising 86 companies was prepared. These companies are listed in Appendix II.

4.3 Hypotheses Tested

In order to establish the use of merchandise budgets, the OTB system, and the RIM by retailers in Australia, the following null hypotheses were established for testing:

1. The majority of companies surveyed do not prepare sales budgets divided into broad merchandise categories.

2. The majority of companies surveyed do not prepare purchases budgets divided into broad merchandise categories.

3. The majority of companies surveyed do not prepare inventory budgets expressed in dollars which are divided into broad merchandise categories.

4. The majority of companies surveyed do not prepare inventory budgets expressed in product units and which are divided into broad merchandise categories.

5. The majority of companies surveyed do not prepare merchandise budgets for a time period exceeding six months.

6. The majority of companies surveyed do not use the OTB control system for all trading departments in their organisation.

7. The RIM is not used by the majority of those companies surveyed.

8. The majority of those companies surveyed using the RIM do not use other methods of inventory valuation because the information used by the RIM is more accurate.

9. The majority of companies surveyed do not use the same variation of the RIM for both internal and external reporting purposes.

10. The majority of companies surveyed do not make incentive payments to staff for the achievement of merchandise budgets.

11. The majority of companies surveyed do not agree that they follow a maximisation policy relating to some financial objective.

The foregoing hypotheses can be grouped into the following minor categories: Hypotheses 1 - 5 relate to merchandise budgeting, Hypothesis 6 to the use of the OTB system, Hypotheses 7 -9 to inventory valuation, Hypothesis 10 to staff incentive payments, and finally Hypothesis 11 to corporate objectives.

4.4 Research Questions

To enable the hypotheses to be tested, it was necessary to answer the following questions for each company:

1. What merchandising budgets are in use?

2. What time span do the merchandising budgets cover?

3. Is the OTB system in use?

4. Is the RIM in use for the purpose of either internal or external reporting?

5. Does the company use the same variation of the RIM for both internal and external reporting purposes?

6. If the RIM is in use, why does the company prefer this
    method of valuation to other methods of valuation
    available?

7. Is budget attainment rewarded by payment of incentive
    payments being made to staff?

8. Specifically, attainment of what merchandise budgets result
    in incentive payments being made to staff?

9. Does the company have an objective of maximisation?

10. If an objective of maximisation is pursued, specifically
    what maximisation objectives are followed?

4.5 Data Collection

Since the stated hypotheses relate to internal corporate
budgeting and control systems, much of the data needed was not
found in either annual company reports or other publicly
available information. It was necessary, therefore, to seek
the data direct from those companies included in the sample.

A draft questionnaire was constructed and tested. The testing
was undertaken using executives of a number of South Australian
retail companies and academics from the University of Adelaide
and the South Australian College of Advanced Education. The
retail executives included a Merchandise Director and a
Management Accountant. The purpose of the testing was to
ensure, as far as possible, that the meaning of the questions
was clear and free from ambiguities and bias.

A copy of the questionnaire, together with the covering and follow-up letters, is contained in Appendix III. As can be seen from the questionnaire, the questions deal with four separate but related topics. Questions 1 -3 deal with budgeting and management control issues. These are designed to identify the use of merchandise budgets and the OTB control system by Australian retailers. To a degree, question 1 underpins the response to question 3 since, if a company does not prepare either sales or purchase budgets, then it is unlikely that that company will use the OTB system. Questions 4 to 6 are designed to identify the use of the RIM and the resulting perceived benefits. Questions 7 and 8 address the issue of staff incentive payments and thus the motivation of staff to attain budgets. Questions 9 and 1Q deal with corporate maximisation policies. Responding companies were given the opportunity to state that they do not follow a policy of maximisation.

The questionnaire was sent with an initial covering letter and a stamped addressed envelope to 86 companies. The letter was personally addressed to the chief executive of the addressee company. A month later, a follow-up letter was sent to those companies not responding to the first letter. This second letter was also accompanied by a copy of the questionnaire and a stamped addressed envelope. In total, replies were received from 61 companies, giving a response rate of 70.9 per cent. The questionnaires were coded to enable the responding company to be identified. This was done with the consent of the respondents.

The data collected in response to these questions was recorded for each company and then summarised in tabulated form. The analysis was then extended and a distinction made between companies employing at least 100 staff and those employing less than this figure. This cutoff was set using criteria from "The Enterprise of Australia" report (1980) in which a staff level of 100 was the deemed cutoff between small and large businesses. It is acknowledged that other measures of corporate size could be used (e.g. turnover, net assets) but for this type of research it was considered that the numbers of employees was most appropriate. The purpose of this extended analysis was to test whether responses for any questions could be shown to be related to corporate size in terms of staff numbers employed. The data relating to numbers of staff employed was obtained from the same directories as previously mentioned.

4.6 Limitations of Research

The research undertaken relates only to the respondent companies and cannot be generalised, with absolute accuracy, to the population of Australian retail department stores as a whole. It could, however, be reasoned that the results received from those companies employing over 100 staff do give a fair indication of practice in this specific population since, for this segment, a response rate of 78.8 per cent was achieved.

Because the data for this part of the research was collected by questionnaire, it is important to recognise the limitations associated with this method. For instance, there may be a bias of non-response. Generally, those who respond to questionnaires are more interested in the topic and possibly understand the topic more than those who choose not to respond. It is considered, however, that a high response rate does nullify this effect to some extent.

Further, the content and information that can be obtained from a questionnaire is limited. A long and detailed questionnaire sent to busy executives is likely to have a low response rate. In this research, the length of the questionnaire was kept to a minimum and only sought information that could be supplied without additional research by the respondent. Also, the format of the responses was designed to be answered reasonably quickly and so explanations and justifications were not requested.

There is a possibility that false responses may be given deliberately or because of a misunderstanding of a question. They may also be given because of an inadequate knowledge of the topic under examination. Since, in this situation, the questionnaire was addressed to the Chief Executive of the companies surveyed, it is hoped that the integrity of those completing the questionnaire would have prevented deliberately false answers. It is reasoned, however, that with the careful pretesting of the questionnaire, the possibility of any misunderstanding was reduced. It is difficult, (if not

impossible) however, to control for false answers due to the limited topic knowledge of the respondent. It is possible that some responses could be biased because of such lack of knowledge, especially in relation to those questions demanding subjectivity in the selection of the response.

4.7 Data Analysis

This section of the Chapter analyses the data collected in order to test the null hypotheses outlined in section 4.3. As stated earlier, replies to the questionnaire were received from 61 companies, yielding a response rate of 70.9%. Five of these responses were unusable, resulting in a reduction in the usable response rate to 65.1%. The unusable responses category comprised questionnaires returned uncompleted. A detailed profile of the responses received is shown in Table 4.1.

Table 4.1

Profile of Responses Received

i) Responses From All Companies

	No	%
Usable responses	56	65.1
Unwilling to assist	5	5.8
No response received	25	29.1
Total	86	100.0

ii) Responses Classified According To Company Size

	<100 Employees		>100 Employees	
	No	%	No	%
Usable responses	30	56.6	26	78.8
Unwilling to assist	4	7.5	1	3.0
No response received	19	35.9	6	18.2
Total	53	100.0	33	100.0

4.7.1 Hypotheses Relating To Merchandise Budgeting

As stated in Section 4.3, Hypotheses One to Five relate to
merchandise budgeting. It is proposed that this group of
hypotheses be dealt with in one sub-section because of their
homogeneity. The results from the questionnaire that relate to
these hypotheses are set out in Tables 4.2 - 4.6.

Hypothesis One: The majority of companies surveyed do not
prepare sales budgets divided into broad
merchandise categories.

As may be expected, the majority of companies do prepare sales
budgets that are divided into broad merchandise categories
(Table 4.2). All of the companies employing more than 100
staff and 83.3% of those employing less than this figure
prepare these budgets. It may thus be concluded that the
hypothesis is not supported and that sales budgets appear to be
a "fundamental" document in almost all department store
businesses.

Table 4.2

Usage of Sales Budgets

	Budget Prepared	%	Budget Not Prepared	%	Total
<100 Employees	25	83.3	5	16.7	30
>100 Employees	26	100.0	0	00.0	26
Total	51	91.1	5	8.9	56

Hypothesis Two: <u>The majority of companies surveyed do not prepare purchases budgets divided into broad merchandise categories.</u>

Table 4.3 indicates that 85.7% of responding companies confirmed that purchases budgets are prepared. This usage rate was highest for large companies where 96.2% of respondents indicated that they use these budgets. **Although the usage rate is not as high as that for sales budgets, the null hypothesis is not supported.**

Table 4.3

Usage of Purchases Budgets

	Budget Prepared	%	Budget Not Prepared	%	Total
<100 Employees	23	76.7	7	23.3	30
>100 Employees	25	96.2	1	3.8	26
Total	48	85.7	8	14.3	56

Hypothesis Three: <u>The majority of companies surveyed do not prepare inventory budgets expressed in dollars and divided into broad merchandise categories.</u>

The "budget adoption gap" between small/medium and large companies became more pronounced when the third hypothesis was tested (Table 4.4). Only 56.7% of small/medium companies prepare inventory budgets expressed in dollars, while for large companies this figure is 92.3%. Since inventory budgets are generally a derivation of sales and purchases budgets, it was

expected that usage of this budget would not exceed the lower usage rate of either the sales or the purchases budgets. The results were therefore consistent with this expectation. Further, the higher usage of this type of budget by larger companies supports Aranya's (1977) findings that larger companies (in terms of size) do tend to adopt more sophisticated budgetary techniques. It is suggested that the preparation of inventory budgets by a company can indicate a more sophisticated attitude to corporate control since such budgets normally promote resource productivity management rather than purely stating the goals of the firm for a defined future trading period. **Again, the null hypothesis was not supported.**

Table 4.4

Usage of Dollar Inventory Budgets

	Budget Prepared	%	Budget Not Prepared	%	Total
<100 Employees	17	56.7	13	43.3	30
>100 Employees	24	92.3	2	7.7	26
Total	41	73.2	15	26.8	56

Hypothesis Four: The majority of companies surveyed do not prepare inventory budgets expressed in product units and divided into broad merchandise categories.

Hypothesis Four did find support from the research findings. Almost 76% of companies surveyed do not prepare budgets expressed in product units (Table 4.5). There is little

difference between small/medium and large company usage with
the percentage being 10% and 19% respectively. This outcome is
a little surprising when one considers the degree of product
computerisation in larger department stores and the frequent
division of merchandise into staple and non-staple
classifications. Staple merchandise usually refers to
"stockfill" merchandise such as socks, stockings, underwear,
etc, which have limited ongoing changes to product styling and
colours over time.

Table 4.5

Usage of Unit Inventory Budgets

	Budget Prepared	%	Budget Not Prepared	%	Total
<100 Employees	3	10.0	27	90.0	30
>100 Employees	5	19.3	21	80.7	26
Total	8	14.3	48	75.7	56

Hypothesis Five: <u>The majority of companies surveyed do not prepare merchandise budgets for a time period not exceeding six months.</u>

Table 4.6 sets out the responses received in relation to this
hypothesis. These responses were analysed in terms of the sub-
budgets that normally make up a merchandise budget. This was
done so that any differences between the sub-budgets, in terms
of time period, could be isolated.

The hypothesis received no support concerning sales budgets
since 50.9% of companies do prepare sales budgets for a period

exceeding six months. However, for each of the other types of budgets, the hypothesis was supported. The fact that sales budgets are prepared to cover a longer time frame may be indicative of the importance of the budget to the wider planning environment of a company. It is considered that, while in many companies the sales budget may hold this position of prominence, generally this cannot be maintained for the purchases and inventory budgets. This is because these budgets are normally derived from the sales budget and so tend to maintain a subservient position.

Table 4.6

Time Coverage of Merchandise Budgets

1. Sales Budgets

	Total		>100		>100	
	No	%	No	%	No	%
1 Month	6	11.8	3	12.0	3	11.5
3 Months	0	0.0	0	0.0	0	0.0
6 Months	19	37.3	9	36.0	10	38.5
Sub-total	25	49.1	12	48.0	13	50.0
9 Months	1	2.0	1	4.0	0	0.0
1 Year	21	41.1	12	48.0	3	34.6
Over 1 Year	4	7.8	0	0.0	4	15.4
Total	51	100.0	25	100.0	26	100.0

2. Purchases Budgets

	Total		<100		>100	
	No	%	No	%	No	%
1 Month	6	12.5	3	13.0	3	12.0
3 Months	0	0.0	0	0.0	0	0.0
6 Months	26	54.1	12	52.2	14	56.0
Sub-total	32	66.6	15	65.2	17	68.0
9 Months	0	0.0	0	0.0	0	0.0
1 Year	15	31.3	8	34.8	7	28.0
Over 1 Year	1	2.1	0	0.0	1	4.0
Total	48	100.0	23	100.0	25	100.0

3. Inventory $

	Total		<100		>100	
	No	%	No	%	No	%
1 Month	6	14.6	2	11.8	4	16.7
3 Months	0	0.0	0	0.0	0	0.0
6 Months	22	53.8	9	52.9	13	54.2
Sub-total	28	68.4	11	64.7	17	70.9
9 Months	1	2.4	1	5.8	0	0.0
1 Year	11	26.8	5	29.4	6	25.0
Over 1 Year	1	2.4	0	0.0	1	4.1
Total	41	100.0	17	100.0	24	100.0

4. Inventory Units

	Total		<100		>100	
	No	%	No	%	No	%
1 Month	2	25.0	1	33.3	1	20.0
3 Months	0	0.0	0	0.0	0	0.0
6 Months	5	62.5	1	33.3	4	80.0
Sub-total	7	87.5	2	66.6	5	100.0
9 Months	0	0.0	0	0.0	0	0.0
1 Year	1	12.5	1	33.3	0	0.0
Over 1 Year	0	0.0	0	0.0	0	0.0
Total	8	100.0	3	100.0	5	100.0

4.7.2 Hypothesis Relating to the OTB System

Hypothesis Six: The <u>majority</u> <u>of</u> <u>companies</u> <u>surveyed</u> <u>do</u> <u>not</u> <u>use</u> <u>the</u> <u>OTB</u> <u>control</u> <u>system</u> <u>for</u> <u>all</u> <u>trading</u> <u>departments</u> <u>in</u> <u>their</u> <u>organisation.</u>

The responses received in relation to this hypothesis are analysed in Table 4.7.

Table 4.7

Usage of the OTB System

Prepared for:	Total		<100		>100	
	No	%	No	%	No	%
All Departments	37	66.1	16	53.3	21	80.8
Most Departments	3	5.4	2	6.7	1	3.8
Some Departments	5	8.9	3	10.0	2	7.7
Sub-total	45	80.4	21	70.0	24	92.3
No Departments	11	19.6	9	30.0	2	7.7
Total	56	100.0	30	100.0	26	100.0

The high usage rate of this system by larger companies is significant especially when one considers the high response rate for this group. By way of contrast, the lower usage rate among small/medium companies is not surprising since in those companies more informal control methods would often be used as a substitute for the more formal OTB system. **The null hypothesis was not confirmed** and so it is considered that the information gathered gives strong support for this research being undertaken on the OTB system. It is suggested that any improvements made to the system should enable employee

performance to be measured more accurately. Such an outcome
could be expected because the effect of system suboptimisation
would be reduced or nullified, so that any negative employee
assessment would be derived primarily from the actions of
employees. Further, if it can be shown that the OTB system in
its present form is capable of suboptimising resource
allocations, then the recommendations made could potentially
increase the return on inventory investment for a number of
Australia's major department store operators.

4.7.3   Retail Inventory Method

Hypothesis Seven: The RIM is not used by the companies
surveyed.

The responses relating to this hypothesis are set out in Table
4.8. As can be seen, **the hypothesis was not supported by the
responses given.** Although this outcome represents the "total"
view, the result is heavily influenced by responses from the
large company sector. Of these companies, 84.6% use the RIM
for some form of reporting, while 61.5% use the method for both
internal and external reporting purposes. However, this is not
the case for smaller companies. Only 40% of these companies
use the system at all with 26.7% using it for both internal and
external reporting. This outcome may be caused, to a large
degree, by the perceived weaknesses of the RIM that were
identified in section 4.5.5. Those weaknesses that could be
particularly relevant here are the costliness of the required
recordkeeping and the fact that many smaller retailers have

difficulty in understanding the mathematical relationships within the model.

Of note, in all companies where the RIM was used for both internal and external reporting, each company reported the use of a common variation of the RIM for both reporting functions. This outcome is surprising since external reporting requires the use of a variation based on the doctrine of conservatism. It will be discussed later, in this Thesis, whether such a variation provides accurate feedback for the purposes of employee performance appraisal.

Table 4.8

Uses of the Retail Inventory Method

Used for:	Total		<100		>100	
	No	%	No	%	No	%
Internal Reporting Only	10	17.9	4	13.3	6	23.1
Both Internal and External Reporting	24	42.9	8	26.7	16	61.5
Sub-total	34	60.8	12	40.0	22	84.6
Method Not Used	22	39.2	18	60.0	4	15.4
Total	56	100.0	30	100.0	26	100.0

Hypothesis Eight: The majority of those companies using the RIM do not use other methods of inventory valuation because the information generated by the RIM is more accurate.

Respondents were invited to give more than one response to this question and so it was expected that the data collected would

clearly isolate the main reasons why the RIM is preferred by users. Of the seven reasons offered, in the questionnaire, five attracted reasonable levels of support from respondents (Table 4.9). The two reasons that failed to gain significant support were, first, the RIM is easier to computerise and, second, it is a method approved by the Australian accounting bodies. The reason gaining the most support (62.8%) was that the "stocktake process is easier". This outcome is not surprising since, under the RIM, stocktakes are based on retail values. Under other methods, cost prices are normally used. The second ranking reason for using the RIM was the opinion (60.0%) that the method "enables more timely information to be generated". It is suggested that this opinion is formed by the fact that the RIM, in contrast to other methods, does not require stocks to be counted or estimated before interim merchandise performance reports are prepared. No other reasons were supported above the 50% level. The reason tested in the hypothesis, that under the RIM "information is more accurate", gained support only at the 40% level. **The hypothesis was therefore not supported.** It is thus concluded that the main reasons for implementing the RIM are to ease the stocktake process and to generate more timely information.

Table 4.9

Reasons For Adopting the RIM

	Total		<100		>100	
	No	%	No	%	No	%
RIM less costly	15	42.8	6	46.2	9	40.9
Information more accurate	14	40.0	3	23.1	11	50.0
More timely information generated	21	60.0	8	61.5	13	59.1
Stocktake process easier	22	62.8	10	76.9	12	54.5
Stocktake results more accurate	14	40.0	5	38.5	9	40.9
RIM easier to computerise	7	20.0	2	15.4	5	22.7
Method approved by Accounting bodies	3	8.6	0	0.0	3	13.6

Hypothesis Nine: The majority of companies surveyed do not make incentive payments to staff for the achievement of merchandise budgets.

The responses were analysed according to the main components of a merchandise budget, that is, sales, gross profit dollars, gross profit rate, inventories expressed in dollars, and inventories expressed in units. This was done so that the budgetary components most rewarded could be isolated.

The outcome of the testing of this hypothesis is considered a very important link in establishing the credibility of the research project. Already, it has been established that both the OTB system and the RIM are used heavily in Australia. This

hypothesis examines the role that such usage plays in measuring and rewarding the performance of employees. If employees are rewarded for the attainment of merchandise budgets then the suitability of the OTB system as an "optimisation tool" and a generator of accurate output information are worthy of testing. This is because such optimisation and accuracy should be attained if employee performance is to be accurately assessed and thus rewards appropriately disbursed.

The responses received are analysed in Table 4.10.

Table 4.10

Payment of Rewards for Budget Attainment

	Total		<100		>100	
	No	%	No	%	No	%
Sales	32	57.1	15	50.0	17	65.4
Gross Profit Rate	11	19.6	6	20.0	5	13.2
Gross Profit Dollars	19	33.9	5	16.7	14	53.8
Either one of G. Profit Rate or G. Profit Dollars	25	44.6	10	33.3	15	57.7
Inventory Dollars	10	17.9	5	16.7	5	19.2
Inventory Units	1	1.8	0	0.0	1	3.8
Companies That Make No Incentive Payments	20	35.8	13	43.3	7	26.9

The hypothesis was not supported since it was clear from the responses that 57.1% of respondents do pay rewards for the attainment of sales budgets. The payment of rewards is more common in large retailing companies. Of these large companies, 65.4% reward sales attainment and 57.7% the attainment of either the gross profit dollars budget or the gross profit rate

budget. For small/medium companies these figures are 50% and 33.3% respectively. When the data from this Table is merged with that from Table 4.7, it is found that 61.5% of large companies do pay rewards for budget attainment after both the OTB system and the RIM have been used as control and measurement devices during the trading period.

For the reasons given earlier in this section, the outcome of this hypothesis testing provides very strong support for the research being undertaken. It is considered, however, that the analysis does suggest that the research should be concentrated on the large company category. This is because large companies are the more significant users of both the OTB and the RIM and, further, more frequently pay rewards for budget attainment.

4.7.4 Corporate Maximisation Policies

Hypothesis Ten: The <u>majority</u> <u>of</u> <u>companies</u> <u>surveyed</u> <u>do</u> <u>not</u> <u>follow</u> <u>a</u> <u>maximisation</u> <u>policy</u> <u>relating</u> <u>to</u> <u>some</u> <u>financial</u> <u>objective.</u>

The final hypothesis tested in this part of the research related to corporate maximisation policies. The reason for including this hypothesis was to examine whether companies seek to attain a predetermined budget instead of maximising the outputs from all available resources. If the sole objective of companies is to attain budget levels, then, the OTB system needs only to allow such attainment to occur. Such a system would not therefore need to have an inbuilt capability to allow

for any upward or downward trends that may be developing. This capability would, however, be needed if companies seek to maximise outputs. An analysis of the responses is displayed in Table 4.11.

Table 4.11

Corporate Maximisation Policies

	Total		<100		>100	
	No	%	No	%	No	%
Sales Turnover So Long As Minimum Profit Levels Are Attained	39	69.6	20	66.7	19	73.1
Shareholders' Wealth	19	33.9	7	23.3	12	46.2
Budget Attainment	16	28.6	7	23.3	9	34.6
Lifetime Earnings of Company Management	2	3.6	2	6.7	0	0.0
Present Value of the Company	6	10.7	3	10.0	3	11.5
Dividend Flow to Shareholders	18	32.1	8	26.7	10	38.4
Retention of After-tax Profits	9	16.1	6	20.0	3	11.5
The Company Does Not Have a Policy of Maximisation	0	0.0	0	0.0	0	0.0

In the questionnaire, there were eight possible answers that could be selected as responses. Multiple responses were also invited. Although no companies stated that they do not pursue a policy of maximisation, 16 companies did state that they do seek to attain budgets. Given this situation, only three companies indicated that budget attainment is the sole objective of the company. This suggests that the remaining 13

companies linked budget attainment together with some other objective.

Since 69.6% of companies indicated that they seek maximisation of sales turnover so long as a minimum level of profits is achieved, the null hypothesis gained no support from the questionnaire responses. This outcome is consistent with the data presented in Table 4.10 in connection with Hypothesis Nine, which dealt with the payment of incentives to employees for the attainment of budgets. It was clear from Table 4.10 that employees are more likely to be rewarded for the attainment of sales budgets than for any other type of merchandise budget. It is suggested that in most corporate situations such a reward structure would be supportive of some penultimate objective such as sales maximisation. It is not surprising, therefore, that the outcomes of Tables 4.10 and 4.11 show such a strong relationship.

4.8   Summary

This Chapter has reported on the usage of merchandise control systems by Australian department store operators. As was stated at the commencement of the Chapter, there was no evidence available that clearly outlined the extent of such usage, and so it was considered necessary that this data be collected. The methodology used in the data collection was described and then the research findings discussed.

An initial list of 176 department store operators was derived from three sources. This list was then reduced to 86 companies by deleting operators trading predominantly in the food or fuel merchandise sectors. With exceptions, subsidiaries of companies already included in the list were also deleted.

The null hypotheses and research questions were then outlined. These formed the basis of the questions asked in the questionnaire. Usable responses were received from 56 companies (65.1%). The response rate was considerably higher for large companies (78.8%).

The questionnaire responses were then discussed. Hypotheses One to Five related to the usage and time coverage of merchandise budgets. Of the merchandise budget components presented in the questionnaire, it was found that sales, purchases, and dollar inventory budgets are all used heavily. As far as time coverage is concerned, the majority of companies prepare sales budgets for a period greater than six months. The other budgets are generally prepared for a shorter time frame.

Hypothesis Six related to the use of the OTB system. It was found that 80.4% of all companies surveyed use this system while for large companies this figure is significantly higher.

Hypotheses Seven and Eight tested the usage of the RIM and the reasons why companies have adopted it. The RIM is used by a majority of all responding companies but the usage is very high

in the case of large companies. The main reasons given for companies adopting the method are that it generates more timely information and it enables an easier stocktake process.

Hypothesis Nine questioned whether companies make incentive payments to staff for the attainment of merchandise targets. The responses indicated that the attainment of sales budgets is most frequently rewarded with the achievement of gross profit dollar budgets following in second place.

Corporate maximisation policies were examined under Hypothesis Ten. The purpose of this test was to establish whether companies maintain that they seek budget attainment rather than some form of maximisation. An analysis of the responses indicated that only 5.4% of the companies surveyed seek to attain budget targets at the total exclusion of other maximisation objectives.

Since it is evident that both the OTB system and the RIM are heavily used by the large Australian department store operators, the ongoing research will concentrate on data available from one of the companies in this category. This data will enable analysis to be undertaken that tests whether the linking of these systems is dysfunctional in the attainment of identified maximisation objectives.

Chapter Five

The Case Study

5.1 Introduction

While there is evidence that the OTB and the RIM are used heavily by Australian retailers, there is no indication of any research that tests the effect of both the OTB system and the RIM on the performance measurement of Australian retailing employees. Ideally, such a study should be capable of being generalised to the population as a whole but, to do this, a randomly selected set of data would need to be collected. Given the confidentiality that normally attaches to this type of data, it is suggested that it is impossible for such an "ideal" study to be undertaken. As an alternative, however, a case study approach can be used. This approach involves the collection of a complete set of data from one company and then the testing of that data against stated hypotheses. It is considered the results will indicate the degree of sub-optimality or otherwise that these systems impose on employee performance outcomes in a company that is representative of an "average population model". This Thesis uses the case study approach and this Chapter outlines the methodology to be adopted together with the hypotheses tested.

5.2 The Case Study Approach

As Yin (1984) has commented, as for other types of research, the usual distinguishing features of a case study are problem

definition, research design, data collection, data analysis, and reporting of results. As the term "case study" implies, the subject of the research requires definition (Post and Andrews, 1982) and this may be a single organisation, as it is in this research, or it could comprise many organisations. However the subject is defined, the boundaries relating to the proposed research need to be clearly set within this context. This is normally done by using null hypotheses, as it is within this thesis.

Six principal sources of evidence have been identified by Webb et. al. (1966) for use in case study analysis. These sources are documents, archival records, interviews, direct observation, participant-observation, and physical artifacts. As Yin (1984) has commented in relation to these sources, there are three important considerations regarding the use of evidence in the case study context. First, two or more sources of evidence that relate to a common set of facts should ideally be used. In this Thesis, information was gained from company documents and interviews. Second, an extensive data base should be assembled. This also was done since over 3000 pages of corporate records were examined, analysed, and, for some, restructured and merged with other available documentation. Examples of these documents are found in Appendix I. Third, a chain of evidence should develop from the assembly of the data to the final conclusions reached. In this Thesis, such a chain of evidence has been developed.

Kaplin (1986) noted that case studies are frequently used in

management accounting research and, in most situations, the study undertaken is characterised by an in-depth study of one organisation. This fact underpins one of the strengths of the case study approach since such a study allows an in-depth understanding and description of the issues at hand, as they relate to the organisation studied. While this is a major strength, a weakness is that one case study cannot serve as a basis for generalisation (Merchant, 1985). While this weakness can exist, a study of one organisation can identify a problem and the causes that could be confounding similar organisations. The conclusions drawn could thus act as a catylist for further research to be undertaken that perhaps includes a greater population. As already stated in Chapter One, when two of Australia's largest retailers became aware of the case study being undertaken in this research, they advised that they were experiencing difficulties in this part of their businesses and so were keen to be advised of the research results. It is therefore expected that the results of this study will lead to further research being conducted in this area.

5.3   Internal Environment of the Selected Company

The company selected for this case study operates in a capital city of Australia and trades through a number of stores. While the company has been prepared to supply the necessary data, it has asked that its identity not be disclosed.

The main activity of the company is described in business directories (e.g. Key Business Directory of Australia) as

department store retailing. The company is structured on a functional basis and the merchandising function operates through 175 departments. These departments are grouped into a number of merchandise categories which are, in turn, divided between eight merchandise divisions. Each division concentrates exclusively on one segment of the softgoods (e.g. clothing) or hardgoods (e.g. toys) market. Between them, these divisions generate sales in excess of $100 million per annum.

The period selected for the study was from February 1983 to January 1985. During this time there were four trading seasons of six months each. This time period was chosen because of stability in a number of key environmental variables. First, the ratio of direct advertising expenditure to sales budget was kept constant. Thus, each department budgeted and spent funds on advertising in a uniform fashion across each period. Second, there were no significant store remodelling exercises undertaken. These had been mainly completed in a previous period and from 1983 - 1985 only minor modifications were made. Third, there was no change in corporate ownership and corporate objectives either immediately before or after the period examined in this study. Fourth, in terms of personnel stability, the buying staff were reasonably settled with a staff turnover of 20% per annum which is considered normal for this activity. There were no changes in either the divisional or functional management and the average annual turnover of senior buyers was only 10%. Buyers were classified as senior when they directed the duties of other buyers more senior in rank than junior or trainee buyers. Senior buyers thus had the

responsibility for a group of merchandising departments.

The corporate objectives for the period related primarily to profit maximisation. This conclusion was reached after discussions with functional management, the reading of inhouse documents, and gaining knowledge of the bonus scheme that related to buyers and buying management.

This bonus scheme potentially increased the annual pre-tax earnings of a buyer by between 5.5% and 14.5%. To achieve the minimum bonus of $700, a buyer had to achieve the gross profit budget together with the sales and inventory dollar budgets. If only the gross profit budget was achieved and other budgets not attained, then 60% of the bonus was paid. However, extra levels of bonus could be earned for superior performance. For example, if the gross profit budget was exceeded by 15% and the other budgets were also met, then $1200 was paid. This amount increased to $1800 if the gross profit dollar budget was exceeded by 25%. For senior buyers these amounts were doubled and for divisional managers doubled yet again. This meant that a divisional manager was able to earn bonuses approximating 12% - 25% of base salary. Bonuses were paid at the conclusion of each trading season.

5.4 Merchandising Financial Control Systems In Use

5.4.1 Forward Planning
Merchandise budgeting was confined to six monthly time periods which corresponded to the defined trading seasons. The only

exception to this was sales budgeting where notional budgets were prepared covering a full financial year or two trading seasons. These sales plans were at divisional level only; at no time were departmental sales budgets prepared on an annualised basis.

Forward budgets were normally prepared and finalised four months prior to the season to which they related. Therefore, for a season that commenced in February 1985 the merchandise budget would be finalised by the end of September 1984. Once the budgets were completed, no further alterations were permissible even if it became apparent that major environmental changes had occurred. Also, buyers reported that on completion of the budgets, orders for the next season were placed in preparation for the launch of the new season's merchandise.

5.4.2 Use of the OTB System

The OTB system was used in most departments of the company. The application of the system was consistent with the model described earlier in Section 3.4. The only departments using an alternative system were the shoe departments where staff controlled the merchandise investment with a shoe count system. Although all other departments had access to the OTB system, the consistency of its use was not constant across all departments. The senior management of the company was aware of this but were much more concerned with the achievement of results than continually having to police the use of a system. They believed operating personnel should strive for results using whatever tools considered most suitable.

The budget figures used in the OTB system were the same as those used in the company budgets and so, once the budget figures had been established, they remained unchanged except for notional alterations made within the OTB system. These alterations directly affected departmental purchasing capacity and were highlighted on the interim and final OTB reports issued weekly and monthly respectively.

Although this is how the formal system was supposed to operate, some divisional and senior buyers admitted to making subjective "off the record" adjustments to both sales and inventory budgets, if they believed allowance had to be made for a changing environment. These adjustments were justified on the basis of the reasoning contained in Section 3.4. Investigations and subsequent discussions with staff revealed that there were, however, a few divisional or senior buyers who seemed to almost completely ignore the OTB system. The identification of such situations and an analysis of the outcomes will be discussed later.

The OTB system used in this company was clearly the cost based model. This means that all variables included in the system were expressed initially at retail values and then the OTB balance converted to cost using the budgeted markup figure. As was stated earlier, such a situation can cause inaccuracies to develop in the OTB system since part of the integrity of the cost based system depends on the budgeted markup figures being realistic. The effect of this will also be tested.

Access to OTB balances was available to operating personnel from three sources. First, there were weekly printed computer reports. These reports, while showing the OTB balance, also stated the sales actual versus sales budget, purchases actual versus purchases budget, and actual estimated stock on hand as compared to budgeted stock on hand. This printout also specified the orders placed but not yet delivered. This additional information was provided so that merchandising personnel could cancel orders if deliveries were not made on time and thus increase available OTB, should this be desired. The second method for personnel to retrieve OTB balances was via the computer screen. Although the information layout was identical to that shown on the computer printout reports, the information was more timely. This was so because the screen information was updated to the close of trade on the previous working day whereas the printed report was accurate only to the close of trading on the previous Wednesday. The third method was reportedly distinctly inferior to the other two available. It required the manual calculation of the OTB balance by using the various daily operating reports issued to merchandising staff. Although there was enough information on these reports to enable such calculations to be made, buyers reported that the main difficulty was ensuring the calculations were accurate. For this reason, this alternative was resorted to very infrequently.

From the above, it is concluded that the merchandising staff of this company had good access to OTB information. Indeed, it

could be argued that, with the data available, there was little justification for any OTB balance being seriously out of control except if such a position was deliberately sought.

5.4.3 Sales Reports

The company issued daily and weekly sales reports. These reports were prepared on a departmental, buying category, buying division, and total company basis. The format of these reports was standard across all reporting areas and an example of such a report is shown in Exhibit 5.1.

Exhibit 5.1

Daily Sales Report

Dept: Toys
Division: Pleasure
Date: Monday 9 Feb. 1984

Sales Act.	Sales Bud.	% Var Bud.	% Var L.Y.	Sales Act.	Sales Bud.	% Var Bud.	% Var L.Y.
2011	1700	18.29	32.3	14397	14100	2.11	27.2

These reports were issued for two main reasons. First, they were issued to advise controllers of responsibility centres (e.g. buying departments) whether sales budgets were being attained. Merchandising personnel had an interest in the attainment of sales budgets since successful performance in this area underpinned favourable performance reviews. Second, the under or over attainment of the sales budget gave notice that adjustments to the available OTB would be made. If the gap between sales actual and sales budget was significant then it could be expected that prompt action would be taken by the

buying personnel to enable a sales surge to continue or, if sales were sliding, to reduce stocks in order to preserve future profits and stockturn.

5.4.4 Purchases Reports

Details of departmental purchases were available from three sources. First, there were computer screen facilities which gave details of the purchases budget for both the current month and the year, together with information of how many dollars had already been committed. These committed dollars were divided between merchandise already received and merchandise yet to be delivered. Also shown on the screen were details of the available OTB. Second, there were reports, printed weekly, for each responsibility centre that gave complete details of all incoming merchandise during the previous week. This report included the initial markup rate used, together with the cumulative markup for the season to date.

The purpose of the report was to give buyers written advice of incoming merchandise and the effect of the markups on the cumulative markup total. These initial markups were set by the buyer as the orders were written. The purchases report thus enabled a buyer not only to review markups continually but, more importantly, to assess the probabilities of attaining the profit budget previously set for the season at hand.

5.4.5 Markdown Report

Markdown reports were issued weekly in arrears and gave details of the markdowns taken, in the previous week, together with

progressive markdowns for the month to date, progressive markdowns for the season to date, and budgeted markdowns for the current trading season. These markdowns were not divided between current and previous seasons' merchandise nor were they "tagged" according to the reason they were taken, be it obsolescence or other factors.

The objective of issuing this report was to alert both buyer and manager of markdowns taken and to signal any excesses that may be occurring. In this company, if excessive markdowns occurred, a directive was normally issued that no further markdowns were to be taken for that particular department without authorisation from a divisional manager. The Merchandise Director reported that the reason for such a directive was based on the knowledge that where markdowns greatly exceed budget, short-term profits may be severely affected. In response, however, it could be argued that a markdown excess is merely the symptom of a problem. The actual problem may be an unrealistic initial markup policy or a rapidly declining rate of stockturn. The effect of an over optimistic initial markup rate on the achievement of both the sales and profit budgets and, thus, on the OTB will be tested in this Thesis. It is suggested that if management actively seeks to attain increased initial markups, increased levels of markdowns may occur and hence buyer performance measurement could be assessed unreasonably.

5.4.6 Profit Reports

Profit reports were issued monthly and segmented into merchandise departments, buying categories, and buying divisions. An example of such a report is shown in Appendix I. Although, in this example, data is shown for a full six month period, this format was used for all stages of the trading period. In other words, if only the first month of a February - July season had been completed, then only the operational data for February would be shown in addition to the budget figures for the full season. Information relating to stocks held is shown to the right of the report. This information effectively reports on the outcome of the application of the OTB. As was discussed earlier, buyers regarded the stock budget as either "fixed" or "variable" depending on the sales level achieved. If the budget was regarded as "fixed" then it could be expected that, if the OTB system had been rigidly applied, the actual closing stock figure should approximate the budgeted stock figure. On the other hand, if the budget had been viewed as a "variable" then there could be a variance between actual stocks and budgeted stocks while meeting the stockturn budget.

5.5 Valuation of Inventory

This company used the RIM, and in particular the variation outlined in AAS2, across all merchandising departments. A description of this method and variation is given in Section 3.5.2 of this Thesis. The adoption of this particular variation on an exclusive basis across all departments, is not

unusual for a retailer. This was discussed earlier and at that point it was suggested that this may result in inaccurate performance evaluation. This possibility will be tested later in this Thesis.

5.6 External Environmental Considerations

It is important that the impact of environmental changes on departmental budgetary moves can be evaluated. It is therefore necessary to examine the external environment conditions that faced the company during the period under review.

5.6.1 Consumer Prices

Consumer prices for the State in which the company operated rose during the period, but the degree of increase varied depending on the expenditure category examined (1985 and 1986 State Year Books). These increases are shown in Table 5.1 using 100 as a base in December 1982.

Table 5.1

Consumer Price Increases

Categories	Clothing	Household Equipment and Operation	All
Dec. 1982	100.0	100.0	100.0
June 1983	104.0	103.6	105.5
Dec. 1983	104.9	107.3	109.1
June 1984	109.3	111.2	109.3
Dec. 1984	112.9	113.7	112.9

5.6.2 Employment and Wages

The number of persons employed in the State during this period

increased and, at the same time, the number unemployed
decreased. The actual figures for the period August 1983 - 85
are shown in Table 5.2.

Table 5.2

Employment and Unemployment Statistics

	Persons Employed	Persons Unemployed
August 1983	430,700	57,300
August 1984	450,700	52,100
August 1985	462,100	47,300

The average weekly earnings also increased during this time.
The average male wage rose by 15.6% while the female rate
increased 16.1%. Such increases were thus greater than the
consumer price increases and so, with the impact of increased
employment, it can be concluded that community discretionary
disposable income increased during the period in real terms.

5.6.3 Other Factors

While the impact of improving economic conditions was
favourable to State residents, there were several factors that
impinged on department store operators at this time. First,
they faced the increased wage costs that were mentioned above.
These increases were greater than the CPI movements and so had
to be absorbed into the cost structure of each company. These
difficulties were alluded to in the Chairman's Report of a
number of listed retailers during this period. Second, the
level of interest rates rose. For example, the overdraft rate
for prime borrowers increased from a mid-rate of 13.75% in June
1983 to 17.25% in June 1985 (Australian Year Book 1986).
Again, these costs had to be absorbed and so it could be

expected that investments in merchandise and capital expenditure would be increasingly controlled over this time.

5.7 Null Hypotheses

So that the OTB system and the RIM could be assessed under various conditions, in terms of suitability for employee performance measurement, the following null hypotheses were established for testing:-

1. The average actual opening stocks as compared to average budgeted opening stocks do not differ between successful and unsuccessful sales departments.

2. Actual purchases as compared to the budgeted level of purchases are not significantly different in percentage terms between successful and unsuccessful sales departments.

3. Average closing stocks of successful departments do not exceed budget more frequently than unsuccessful sales departments.

4. The merchandise flows of high fashion departments are not different from those of other departments.

5. The average actual opening stocks as compared to budgeted opening stocks do not differ between successful and unsuccessful profit departments.

6. Actual purchases as compared to the budgeted level of purchases are not significantly different in percentage terms between successful and unsuccessful profit departments.

7. Average closing stocks of successful departments do not

exceed budget more frequently than unsuccessful profit departments.

8. Successful profit departments do achieve sales budgets more frequently than unsuccessful departments.

9. Successful profit departments do not achieve the gross profit rate budget more frequently than unsuccessful profit departments.

10. The formal OTB system does not impede the profitability of high fashion departments.

11. Sharp increases in initial markups between trading periods do not cause subsequent increases in markdowns.

12. Sharp increases in initial markups between trading periods do not cause subsequent increases in markdown levels for all three major product categories.

13. In any one season, those markdowns taken which were caused by sharp increases in intake rates, did not have a material effect on profit.

14. The use of the cost multiplier in the RIM model does not generate reasonable estimates of cost values in the valuation of inventory if the averaged cost multiplier has increased by more than 10% over the previous trading period.

15. Markdowns taken because of variations in opening stock as a percentage of budgeted sales between seasons do not materially affect departmental gross profit levels.

The above hypotheses can be divided into a number of groupings. The first three Hypotheses concentrate on successful and unsuccessful sales departments. These Hypotheses attempt to isolate those variables (i.e. opening stocks, purchases, and

closing stocks) that impact on sales performance. Hypothesis
Four seeks to examine whether merchandise flows for high
fashion departments differ from other departments. It is
reasoned that if differences occur then if changes are to be
made to the existing OTB model, these changes will have to
allow for any differences in flows between high fashion and
other departments. Hypotheses Five to Seven attempt to isolate
those variables that significantly affect profit performance.
If such outcomes are found to exist and a company seeks to
maximise profit, then account needs to be taken of the
conclusions reached from the testing of these Hypotheses.

Hypotheses Eight and Nine seek to determine the causes of a
successful profit performance. Because the questionnaire
results in Chapter Four confirmed that the majority of major
Australian retailers seek profit maximisation, or a variation
thereof, it is important to define whether sound gross profit
results are generated by initial high intake rates or high
sales volume. This is important since the result will provide
the major parameters for the optimal OTB model if profit
maximisation is to occur. Hypothesis Ten tests whether the
effects on profitability differ between high fashion and other
departments.

Hypothesis Eleven examines the effect of sharp increases in
markups on the level of markdowns taken later in the trading
season. As discussed in Chapter Three, it is normally argued
that markdowns are generated because of merchandise
obsolescence. Indeed, this view is supported in the structure

of the most commonly used variation of the RIM in Australia (i.e. that described in AAS2). This Hypothesis seeks to show that extraordinary levels of markdowns can occur if initial markups are unrealistically high. If this is proven then, for the purposes of performance appraisal, the most frequently used variation of the RIM will need alteration if it is to generate accurate results.

Hypotheses Twelve and Thirteen extend Hypothesis Eleven. Hypothesis Twelve tests whether the results generated by Hypothesis Eleven are consistent for all major product categories while Hypothesis Thirteen examines the effect on profitability.

Hypothesis Fourteen attempts to establish that if initial markups are increased sharply, then not only will markdowns be affected but, as importantly, the conversion of retail values to cost. If this is proven, gross profit calculations will be shown to be erroneous and hence the accuracy of performance appraisal further eroded. Finally, Hypothesis Fifteen attempts to link markdowns to levels of opening stock. If this linkage is proven, a case can be made for the attachment of markdowns to merchandise. Should this need to be done, to generate accurate appraisal, then it could be that it is necessary to allocate markdowns across trading seasons rather than account for them on a "lump-sum basis".

5.8 Summary

The Chapter commenced with a discussion outlining why the case study approach would be used in this Thesis instead of a wider sample base. A description of the case study approach then followed. From this description, the discussion moved to an examination of the internal environment of the selected company. Reasons were given why the period February 1983 to January 1985 was selected as the most suitable data base to be used when testing hypotheses. The structure of the merchandising function was also outlined and aspects of merchandising budgeting were analysed. This analysis was weighted towards those budgeting and merchandising activities that affect the operation of the OTB system and the RIM.

The internal environment of the company during this period was also discussed. This discussion was then extended to an analysis of the external environment. In particular, movements in consumer prices, employment, wages, and finance charges were highlighted.

The final section of the Chapter outlined the Hypotheses to be tested in the remainder of the research programme. In this discussion, it was shown how the separate Hypotheses "fit together" and thus collectively achieve the overall research objective.

The next Chapter concentrates on those variables that could impact on sales performance. Specifically, the first three

hypotheses are tested and the outcomes discussed. This testing commences the analysis of the "traditional" OTB model and its suitability as a control tool if a maximisation objective is to be achieved.

Chapter Six

The Sales Performance of an Open-To-Buy System

6.1 Introduction

This Chapter examines the sales performance of departments using the OTB system and seeks to isolate factors that cause success or failure in a trading season. These factors are then analysed as variables of the system (if appropriate) and conclusions drawn as to whether the formal OTB system allows sales optimisation. Success or failure is judged in terms of sales performance. If it can be shown that the OTB model does not allow sales maximisation then this may have serious implications for most retailers who use this model. These results would imply that not only are the majority of Australian retailers operating at sub-optimum efficiency, but the performance of employees is being incorrectly assessed. As discussed in Chapter Four, the majority of Australian retailers reward employees for the attainment of sales objectives.

The Chapter commences with an outline of the methodology to be followed in the selection of successful versus non-successful departments. Results from testing Hypotheses One - Three are then outlined. These hypotheses were listed in Chapter Five. The Chapter concludes with a discussion of the results and the significance of these for the OTB model.

6.2 Selection of Data

As stated in Section 5.2, the period selected for the study was from February 1983 to January 1985. This time period covers four six monthly trading seasons and in each season the company utilised approximately 175 trading departments. All departments were considered eligible for selection with the exception of the shoe departments. These departments did not use the OTB system.

For each season, departments were ranked with regard to sales performance. The best and worst 20% of performances were then separated as the basis for further testing. The cutoff point of 20% was used to enable sufficient separation between the most successful and least successful groups. This cutoff point also allowed for reasonably sized groups.

It could be argued that it would be preferable to examine the results for any department over the complete two years rather than a single six month period. However, this would not be appropriate for a number of reasons. First, the company budgeted on a six monthly time frame. This period was consistent with that used by other retailers (section 4.7.1). With testing being concentrated on defined six monthly seasons, any variations in the budget process as they affect individual departments over time are thus eliminated. Second, the OTB system only controlled buying over a six month period. Third, the bonuses paid to buyers were calculated using only the

results for one six month season. This means that the efforts
of buyers were directed to the achievement of the predetermined
six monthly budgets. Fourth, over a two year period a number
of departments were amalgamated and new ones formed. These
changes were made in line with the marketing strategy of the
company. Fifth, with normal buyer resignations and promotions,
together with the ongoing shuffling of buying portfolios,
departmental results may be affected and this variable not
adequately controlled.

The membership of the most successful and least successful
groups was redetermined every six months. This meant that
these groups were not consistent in terms of departmental
membership from season to season. This outcome was expected
since when the buyers were interviewed, they continually stated
that they had difficulty in achieving top results on a
consistent basis when the OTB system was being fully or even
partially utilised. Thus, while a department may have achieved
excellent results for one or more seasons, only good results
may have been generated in other seasons. This trend was very
apparent on examination of the data in this case study. When a
department had a reduction in sales or profit, relative to past
results, this was normally only marginal but enough to exclude
it from the sample.

6.3 Data Analysis

This section examines whether the OTB system impedes sales
performance. To achieve this, the results of the most

successful and least successful performing departments are
compared. In these comparisons the emphasis is on stock - the
quantity of opening stock, the quantity and timings of new
stock purchases, and the quantity of stock remaining at the end
of the trading season. This concentration is justified since
it is the availability of stock that creates sales.

6.3.1 Opening Stock

Hypothesis One: The average actual opening stocks as compared
to average budgeted opening stocks do not
differ between successful and unsuccessful
sales departments.

The outcome of testing this Hypothesis is important since it
indicates whether sales performance is related to quantity of
opening stock. If it is shown that the best performing
departments do commence a new trading season with stocks in
line with budget, while the worst performing departments do
not, then a case could be argued that, for the lower performing
departments to succeed, opening stocks should be at budgeted
levels. On the other hand, if both the most successful and
least successful groups commence with approximately the same
levels of stock then the causes of inferior performance must
rest with other variables. In addition, if the Hypothesis is
confirmed, credibility will be added to the first part of the
OTB equation, namely that dealing with opening stock. It will
mean that this part of the equation does not detract from sales

performance and is therefore valid for all levels of potential performance.

In testing this Hypothesis, the first level of analysis examines the number of departments in each category that commenced a trading season with stocks in excess of budget. The results are shown in Table 6.1.

Table 6.1

Percentage of Successful and Unsuccessful Departments Commencing a Trading Season With Stocks in Excess of Budget.

	Feb/July 83		Aug/Jan 84		Feb/July 84		Aug/Jan 85	
	No	%	No	%	No	%	No	%
Successful	12	33.3	26	72.3	26	76.2	20	58.8
Unsuccessful	14	38.9	22	61.1	17	50.0	19	55.9
Variance	(2)	(5.6)	4	11.2	9	26.2	1	2.9

As can be seen, the results were mixed and quite inconclusive. In two seasons the successful group commenced trading with more departments carrying stock in excess of budget while it was the reverse for the other two seasons.

Since a more definite outcome was desired, the mean and standard deviation were established for each group. A T-Test was also used and this analysis was extended with the use of the non-parametric Mann-Whitney test. Justification for the use of the Mann-Whitney test is provided by Siegel (1956, p.126). He stated that this test is an excellent alternative to the T-Test since it does not have the restrictive assumptions and requirements associated with that test. Once again the basis of analysis is the comparison of actual stocks

to budgeted levels. The results are shown in Table 6.2.

Table 6.2

Comparison of Mean Departmental Opening Stocks and Standard Deviations.

	Feb/July 83		Aug/Jan 84		Feb/July 84		Aug/Jan 85	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Successful	105.5	73.4	135.7	63.3	155.8	104.1	115.5	39.3
Unsuccessful	97.0	42.1	111.3	53.3	106.7	58.4	122.7	60.8
T=	.581		1.747		2.444		-.570	
Mann-Whitney Z-Statistic	.10571		1.5889		2.6701		.1540	

Again, the results suggest that there is little difference between successful and unsuccessful departments. An examination of the means show that in two seasons reasonable differences existed between successful and non-successful departments. These differences were confirmed by the application of the T-Test when in two seasons, the Hypothesis was rejected at the 5% level of significance. However, while noting this outcome, the rejection of the hypothesis in the August - January 1984 season was very marginal. The Mann-Whitney test confirmed this marginality when on application of this test the hypothesis was accepted for all seasons excepting the February - July 1984 season.

On the basis of Tables 6.1 and 6.2 together with the supporting discussion, it is concluded that Hypothesis One is supported and that variations in actual versus budgeted opening stocks, between successful and non-successful departments, do not significantly affect ongoing sales performance. The

performance differences between the two categories must therefore be caused by one or more of the other variables in the OTB equation.

6.3.2 Purchases

Hypothesis Two: <u>Actual purchases as compared to the budgeted level of purchases are not significantly different between successful and unsuccessful sales departments.</u>

In testing this Hypothesis, the analysis of purchases was confined to the first three months of each trading season. This was done because, first, it is in these months that the "fresh stock image" is created and, second, once the first three months of trading pass, purchasing power can be restricted by the OTB system if the department is performing poorly. In addition, as stated in section 5.4.1, buyers normally placed orders for the bulk of their purchases at least two months ahead of delivery. For some departments (such as women's fashion) this lead time was much longer. Thus, orders were placed without any knowledge of impending sales patterns. Purchasing limits would therefore be the purchases budget unadjusted by the OTB system.

This stage of the analysis concentrates on determining whether, in the first three months of each season, successful departments purchased ahead of budget more frequently than unsuccessful departments. The results are shown in Table 6.3.

Table 6.3

Percentage of Successful and Unsuccessful Departments Purchasing Ahead of Budget

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
Successful				
- Mth 1	72.2%	30.6%	35.1%	41.2%
- Mth 2	88.9%	47.2%	43.2%	55.9%
- Mth 3	88.9%	63.9%	48.6%	52.9%
Unsuccessful				
- Mth 1	33.3%	13.5%	11.1%	5.9%
- Mth 2	27.8%	18.9%	16.7%	11.8%
- Mth 3	27.8%	10.8%	19.4%	8.8%

An examination of Table 6.3 clearly suggests that there was a difference in purchasing pattern between successful and unsuccessful departments. This difference indicates that top performing departments were more likely to have new merchandise available for sale during the budget period than their lower performing counterparts. As an extension of Table 6.3, it was decided to calculate the average actual purchases as a percentage of budgeted purchases so that the difference in means could be established and thus levels of significance determined. Although unlikely, it could be that Table 6.3 presents an overly unfavourable view with regard to lower performing departments when, in fact, the differences between the two groups are much less. These figures are presented in Table 6.4.

Table 6.4

Means of Departmental Purchases

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
Successful				
- Mth 1	146.5%	79.5%	105.9%	107.6%
- Mth 2	156.5%	107.4%	115.6%	112.6%
- Mth 3	154.4%	115.2%	116.2%	108.6%
Unsuccessful				
- Mth 1	86.9%	49.7%	61.8%	55.3%
- Mth 2	91.2%	70.6%	71.2%	60.5%
- Mth 3	87.3%	68.5%	69.6%	62.8%
Variances				
(Successful - Unsuccessful)				
- Mth 1	59.6%	29.8%	44.1%	52.3%
- Mth 2	65.3%	36.8%	44.4%	52.1%
- Mth 3	67.1%	46.7%	46.6%	45.8%

As can be seen in Table 6.4, there was a significant difference in purchasing patterns between successful and unsuccessful departments. Not only do successful departments purchase ahead of budget in month one but this trend continues. This is not so for unsuccessful departments since, in the total period under study, at no stage was the mean purchasing percentage above 100%. The extent of these differences became apparent when the Mann-Whitney test was applied. The results of these are shown in Table 6.5.

Table 6.5

Mann-Whitney Test Applied to
Purchasing Strategies Used
by Successful and Non-Successful Departments

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
- Mth 1	3.6178	2.6150	2.0167	4.2684
- Mth 2	5.0970	4.0383	2.8843	5.2374
- Mth 3	5.6381	6.1126	4.1011	6.1205

As noted from an examination of Table 6.5, it was confirmed that the populations of actual purchases, as compared to budgeted levels, were statistically different at a 5% level of significance in all seasons. These differences gathered strength as buying continued in each season. This evidence confirms that differences in purchasing levels between departments significantly affect future sales results. It is thus concluded that Hypothesis Two is rejected since there is a significant difference in purchasing strategy between successful and unsuccessful departments.

This outcome is important when coupled with the results of testing Hypothesis One. In that testing, it was concluded there was no significant difference between the mean percentage of actual to budgeted opening stock for successful and unsuccessful departments. It was also shown that, for both groups, the mean opening stock levels were in excess of 100% of budget. In terms of the OTB model, this means that an initial reduction would have to be taken in the available purchases limit in order to keep the model in balance. While this may have been done by the worst departments (Table 6.4), it was

evident that this was not an adjustment made by the best departments. The mean percentage of purchasing in these departments was consistently above the 100% level in the first three months of each trading season. It can therefore be argued that, since strong performances need the purchases budget to be at least 100% spent, modification is required to the formal OTB model to allow these strong performances to flow more naturally. This modification must allow for such spending on purchases regardless of opening inventory levels.

6.3.3 Closing Stocks

Hypothesis Three: Average closing stocks of successful departments do not exceed budget more frequently than unsuccessful departments.

This Hypothesis concentrates on the possibility that successful departments do ignore the formal OTB system and allow actual closing stocks to exceed budget and so maintain planned stockturn rates. It also tests whether less successful departments adjust downwards their actual closing stocks as compared to budgeted levels, in order to maintain desired stockturn rates.

Testing involved determining the percentage of successful and unsuccessful departments completing a trading season with stocks in excess of budget. These results are shown in Table 6.6.

Table 6.6

Percentage of Successful and Unsuccessful Departments Completing a Trading Season With Stocks in Excess of Budget.

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
Successful	66.7%	75.0%	67.5%	50.0%
Unsuccessful	44.4%	45.9%	45.7%	44.1%
Variance	22.3%	29.1%	21.8%	5.9%

An analysis of Table 6.6 shows that in all seasons more successful departments completed the trading season with stocks in excess of budget than their less successful counterparts. In all seasons except one, the differences in percentages were material. On this evidence, **it is concluded that the Hypothesis is not sustained.**

It was decided to further examine this relationship of sales and closing stocks since it was believed the notion of successful departments carrying closing stocks in excess of budgets warranted more investigation. Also, the extent to which unsuccessful departments voluntarily reduce stock levels once it is evident that the sales budget will not be achieved needed additional analysis. While mean closing stock levels have been established for each group, so far there has been no attempt to compare these stock levels with sales performances. For the purposes of testing, Minor Hypothesis One was established.

Minor Hypothesis One: Mean closing stocks as a percentage of budget do not approximate mean actual sales levels as a percentage of budget.

The results from this analysis are shown in Table 6.7.

Table 6.7

A Comparison of Mean Sales And Mean Closing Stocks

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
Successful				
– Sales	145.25%	149.75%	119.63%	114.88%
– Stocks	138.81%	136.58%	129.48%	100.02%
Unsuccessful				
– Sales	70.92%	72.22%	66.81%	59.94%
– Stocks	98.00%	114.13%	101.61%	93.73%

The results in this Table indicate that while mean stock levels for successful departments correlate closely with mean sales, this is not so for unsuccessful departments. Mean stocks for this group lag significantly behind mean sales, while for successful departments, the opposite is the case. It seems that although sales were faltering, unsuccessful departments did not initiate any action to reduce stocks below formal budgeted levels. While making this observation, it must be recognised that the OTB model does not demand this action. It only requires that stocks be at the predetermined budgeted levels. In the case of the successful departments, as has already been discussed, mean stock levels were generally well in excess of budget. Thus it seems that for a department to be

successful, the OTB system needs to be overridden with regard to its requirements on closing stocks.

To summarise, **this minor Hypothesis was accepted for unsuccessful departments but rejected for the successful group.** This result, however, will be re-examined in the next chapter when profit performances between the two groups are examined.

6.4 High Fashion Departments

6.4.1 Introduction

It was decided to test for differences that may attach to high fashion departments since it is recognised that these departments do have specific characteristics including high stock turnover and a higher than average product obsolescence risk. Similar characteristics were recognised by Pashigian (1988) in a study that also required a separation of categories.   It is reasoned that such differences could impact on the formal OTB model and thus require changes to be made to the model to better accommodate this trading pattern. In these circumstances, it may be necessary for a company to operate more than one version of the OTB model to enable trading optimality to occur.

Hypotheses Four: The merchandise flows of high fashion departments are not different from those of other departments.

To enable a logical testing sequence of Hypothesis Four to occur, a series of minor hypotheses were established. These are included in Section 6.4.2.

6.4.2 Selection of Data

The high fashion departments were selected from the total list of departments available for the company. Two fashion buyers in the company under study were asked to agree on the departments to be identified as high fashion. Eighteen departments were selected which approximate 10% of the departments in the database. The 20% criteria was again applied which meant that the performances of eight departments were analysed in each season. For the purposes of assembling a database of reasonable size, all successful departments were analysed as one group, regardless of the particular season. The analysis of unsuccessful departments was undertaken in the same way.

6.4.3 Opening Stock, Purchases, and Closing Stock

Minor Hypothesis Two: There is no material difference, in terms of actual versus budgeted opening stock, between high fashion and other departments.

Minor Hypothesis Three: <u>There is no material difference, in terms of actual purchases as compared to budgeted purchases, between high fashion and other departments.</u>

Minor Hypothesis Four: <u>The average closing stocks of high fashion departments do not exceed budget more frequently than those of other departments.</u>

The data used to test all the above minor hypotheses is summarised in Table 6.8.

Table 6.8

High Fashion Departments
Versus Other Merchandise Categories

	High Fashion		Other	
	Freq.	Mean	Freq.	Mean
(1) Opening Stock:				
– Successful	43.8%	88.7%	63.0%	134.1%
– Unsuccessful	31.2%	78.1%	52.6%	111.5%
(2) Purchases P1:				
– Successful	43.8%	106.5%	43.3%	109.6%
– Unsuccessful	18.8%	75.1%	17.0%	63.1%
(3) Purchases P2:				
– Successful	43.8%	101.2%	59.1%	125.6%
– Unsuccessful	6.3%	80.2%	20.7%	72.5%
(4) Purchases P3:				
– Successful	43.8%	103.1%	63.0%	131.6%
– Unsuccessful	6.3%	76.9%	17.8%	72.1%
(5) Closing Stock:				
– Successful	50.0%	100.8%	68.3%	134.6%
– Unsuccessful	31.2%	84.4%	46.7%	111.1%

In terms of Minor Hypothesis Two, it was concluded that there is a material difference between high fashion and other

departments and thus the Minor Hypothesis is rejected. Table 6.8 (1) shows that for both the successful and unsuccessful high fashion departmental groups, average opening stock levels are considerably below those of the other category. This outcome could be determined by the very nature of high fashion merchandise. The high risk of obsolescence, especially at the end of a trading season, would demand that minimal stock be carried forward to the next comparable trading season. Often such a season would be six months in the future. While this Minor Hypothesis is rejected, it is also concluded that the OTB model did not appear to inhibit strong sales performance in the high fashion category, since the mean opening stock carried for successful departments was less than 100%.

Minor Hypothesis Three concentrated on differences in purchasing between the two merchandise groups. Table 6.8 (2 - 4) shows that for high fashion departments the differences between the successful and unsuccessful groups are similar to differences in the other category. In both merchandise groupings, few of the unsuccessful departments committed and spent their purchases budget in the first three months of a trading season. For successful departments, the trend is similar for both merchandise groups except that, while the other departments tend to increase the percentage of actual over budget, high fashion departments held the overspending on budget at a reasonably constant level. To summarise, while a similar pattern exists, **there is a material difference in purchasing strategy between the two merchandise groups. This Minor Hypothesis is therefore rejected.** For both the

successful and unsuccessful high fashion departments there appears to be evidence of some conservatism in the purchasing strategy adopted as compared to other departments. This is evident from a comparison of the excess of actual mean purchases over budget figures for both groups.

Minor Hypothesis Four concentrates on closing stocks, and specifically tested whether high fashion departments carry closing stocks in excess of budget more frequently than other merchandise categories. Table 6.8 (5) indicates there is again a difference between these two groups. While both successful and unsuccessful non-high fashion departments have mean stocks above budget this is not so for high fashion departments. Unsuccessful high fashion departments are firmly below budget levels and successful departments, on average, have closing stocks in line with budget. In terms of frequencies, there is a major difference between the merchandise groups. **Other departments much more frequently exceeded closing stock budgets than did high fashion departments. Minor Hypothesis Four is thus rejected.**

On the basis of testing Minor Hypotheses Two - Four, Hypothesis Four is rejected. As a byproduct of testing the Minor Hypotheses, however, one other important observation can be made. Data in the "Other" columns (Table 6.8) excluded data from any high fashion departments that may have been included in Tables 6.1 - 6.7. The result is that the displayed figures are higher than those shown earlier in the Chapter. This means that, if a non-high fashion department is to maximise sales, it

will very frequently commence the trading season with stocks
considerably in excess of budget, purchase merchandise ahead of
budget, and finally have closing stocks in excess of budget.
The OTB model does not cater naturally for these excesses.
This observation strengthens the outcomes of testing major
Hypotheses One - Three and gives further weight to the argument
that the formal OTB model is not adequate if sales optimisation
is to occur.

Indeed, it means that since the budgets incorporated in the OTB
system are often the basis for performance rewards to buyers
(as discussed in Chapter 4), these rewards will be restrained.
This is further discussed in a subsequent chapter.

In summary, there are significant differences between high
fashion and other departments. These differences give weight
to the earlier view that the OTB model in itself is inadequate
if sales maximisation is to occur.

6.5 Summary

This Chapter has examined sales performance and its interaction
with the OTB system. The objective of the Chapter was to test
whether the use of the OTB system impedes sales maximisation.
It was suggested that, if it could be shown that this does
occur, the formal OTB system would need modification.

The data used for testing was sourced from the trading records
of approximately 175 merchandise departments over four six-

monthly periods. For each season sales performances were
ranked and the most and least successful 20% of performances
were isolated for further testing. This testing concentrated
on opening stocks, purchases, and closing stocks. In the
latter part of the Chapter the relative performances of high
fashion versus other departments were compared and differences
between these groups isolated.

The first Hypothesis to be tested in the Chapter examined
whether there are differences between successful and
nonsuccessful departments in terms of opening stocks held. It
was found that there were no significant differences in opening
stocks held between these groups.

The second Hypothesis concentrated on purchases and sought to
identify differences in purchasing patterns between the two
groups. The data analysed was conclusive in that there were
significant differences. This outcome was then coupled with
the results from testing Hypothesis One, and it was suggested
that for sales maximisation to occur, it is apparent that some
modification is required to the OTB model.

Differences in closing stock levels were tested under
Hypothesis Three. It was found, that in all seasons, the
successful departments completed the trading season with stocks
more in excess of budget than their unsuccessful counterparts.
Further, the mean stocks held exceeded budget in each season.
Mean closing stock levels were then compared to mean sales for
each category. While it was shown that mean stocks and sales

were strongly correlated for successful departments, this was
not so for the unsuccessful group. This testing further
highlighted that changes need to be made to the OTB model.

The testing of Hypotheses relating to high fashion and other
departments followed the same pattern as earlier in the
Chapter. It can be concluded from this testing that there are
differences in strategy between high fashion and other
departments. These differences showed that high fashion
departments tended to adhere to set budgets more than their
"other" counterparts, generating more conservative sales
results. Interestingly, once the high fashion results were
extracted from those of the other category, stronger evidence
was produced that changes do need to be made to the OTB model
if sales maximisation is to occur.

While this Chapter has concentrated on the interaction of sales
performance and the OTB model, the next Chapter examines profit
performance and the OTB system. Comparisons will also be drawn
between the findings of both Chapters.

Chapter Seven

The Profit Performance of an Open-To-Buy System

7.1 Introduction

In this Chapter, the focus on trading performance continues. While in the previous Chapter sales performance was examined, in this Chapter profit results are analysed. As was shown in Chapter Four, over 57% of major retailers pay performance rewards to staff for the attainment of gross profit objectives. In this Chapter the main objective will be to analyse whether or not the OTB system does detract from profit performance. It is obviously imperative that any management control system interfacing with employee performance must enhance and not detract from that performance. The structure of this Chapter is similar to that of Chapter Six.

7.2 Selection of Data

The methodology applied to the selection of data was identical to that used in Chapter Six. In summary, profit results for nearly 200 departments were available for analysis. These results covered four six month trading periods. From this database, the best and worst 20% of departmental profit performances were identified for testing. As stated in Section 6.2, the membership of the best and worst groups was redetermined every six months. Reasons for this approach were given in that Section.

7.3 Data Analysis

7.3.1 Opening Stock

It is necessary to establish whether opening stock levels are an indicator of pending profit performance. If they are, attention will then need to be given to them in the redesign of an OTB system dedicated to the maximisation of profit. If not, it can then be argued that the quantified amount of opening stock should not be included in such a redesigned OTB system. As previously discussed, the OTB model seeks to constrain stocks to budgeted targets and it could be that, for a department to be successful, it needs to have actual opening stocks in excess of budget. If this is so, it could be that some modification is required to the formal OTB model.

Hypothesis Five: The average actual opening stocks as compared to budgeted opening stocks do not differ between successful and unsuccessful profit departments.

To test this Hypothesis, those departments in each category with opening stocks in excess of budget were identified. The results are shown in Table 7.1.

Table 7.1

Percentage of Successful and Unsuccessful Profit Departments Commencing a Trading Season With Stocks in Excess of Budget

	Feb/July 83		Aug/Jan 84		Feb/July 84		Aug/Jan 85	
	No	%	No	%	No	%	No	%
Successful	11	31.4	20	57.1	24	70.6	20	58.8
Unsuccessful	20	60.6	21	60.0	23	65.7	20	58.8
Difference	(9)	(29.2)	(1)	(2.9)	1	4.9	0	0.0

As can be seen, the results were similar for both the successful and unsuccessful categories. Only in one season were the results substantially different. Of note, however, in both categories, is the fact that a majority of departments commenced the trading season with stocks in excess of budget.

Similar data was extracted in the previous Chapter (Table 6.1) in order to evaluate the effect of opening stock levels on later sales performance. A cross comparison of Table 6.1 with Table 7.1 suggests that the results are similar for successful departments. However, as can be seen, consistently more unsuccessful "profit" departments started a season with stock in excess of budget than did their "sales" counterparts. The extent of these differences becomes more apparent when data in Tables 6.2 and 7.2 are compared. Table 7.2 contains a comparison of means and standard deviations for profit departments.

Table 7.2

A Comparison of Mean and Standard Deviations For "Profit" Department Opening Stocks

	Feb/July 83		Aug/Jan 84		Feb/July 84		Aug/Jan 85	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Successful	86.8	44.1	128.4	67.4	125.1	47.5	121.5	44.7
Unsuccessful	119.8	55.9	124.8	56.5	137.4	100.1	123.4	61.1
T=	2.727		.242		.649		.146	
Mann-Whitney Z-Statistic	2.785		.247		.765		.356	

The results in Table 7.2 again show that there was little difference between successful and unsuccessful profit departments. Not only is this apparent from a comparison of the means, but is confirmed by both the application of a T-Test and the Mann-Whitney test, with a 5% level of significance. It can be concluded, therefore, that the analysis of the data provides strong support for Hypothesis Five.

Nevertheless, the actual size of the means for both categories deserves comment. As can be seen, the means were more than 20% above budgeted levels, with one exception. Thus, the majority of departments were entering trading seasons with "automatic" reductions to their OTB limit. This situation impacts on dollars available for new stock and so influences the amount of new merchandise available for sale. The one exception to this occurred in Feb/July 1983. It would appear that this was caused by a delay in processing incoming stock at the completion of the previous trading period. Evidence of this

can be seen in Tables 7.3 and 7.4 where purchasing in month one exceeded that of all successive periods.

A comparison of Table 7.2 with Table 6.2 shows that notable differences exist between sales and profit departments. While the means for successful sales departments are higher than those for profit departments, the reverse situation exists for departments in the unsuccessful category. A number of reasons for this could be suggested. The reason successful "sales" departments have higher means could be that, in order to achieve higher levels of sales, more stock was carried. This suggestion is supported by the clear evidence in Chapter 6 of a strong link between overstocking and sales success. It could be argued therefore that some of these departments were sacrificing profits for sales.

The fact that the means of unsuccessful profit departments were higher than those in the sales category, could suggest that this "overstocking" is part of the reason why these departments were in the unsuccessful profit category. If the overstocking contained a higher than normal level of obsolete merchandise, then excess markdowns would be required thus marginally affecting gross profit rates. These issues will also be explored later in this and subsequent Chapters.

7.3.2 Purchases

Hypothesis Six: Actual purchases as compared to the budgeted level of purchases were not significantly different in percentage terms between successful and unsuccessful profit departments.

As explained in Chapter 6, the analysis of purchases was confined to the first three months of a trading season since it is in this period that a "fresh" stock image is created. Also, towards the end of this initial period, the OTB system can have a marked effect on purchasing limits if sales have been poor up to that point in time.

An examination of Table 7.3 shows that successful profit departments more frequently purchased ahead of budget than their unsuccessful counterparts.

Table 7.3

Percentage of Successful and Unsuccessful Profit Departments Purchasing Ahead of Budget

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
Successful				
- Mth 1	61.8%	25.7%	41.2%	38.2%
- Mth 2	80.0%	38.9%	41.2%	50.0%
- Mth 3	76.5%	54.3%	52.9%	47.1%
Unsuccessful				
- Mth 1	33.3%	11.4%	11.8%	20.6%
- Mth 2	45.5%	17.1%	17.1%	17.6%
- Mth 3	51.5%	11.4%	20.6%	11.8%

Table 7.3 suggests that success is related to the percentage of the purchases budget that is spent. This conclusion was also reached when sales performances were examined. There is, however, a difference in purchasing patterns between sales and profit departments. A review of Table 6.3 shows that successful sales departments more frequently purchased ahead of budget than did their profit counterparts. This suggests a higher level of risk taking by those departments, and is consistent with the view expressed in Section 7.3.1. Also, there are minor differences associated with the unsuccessful categories. A comparison of the Tables shows that more profit departments purchased ahead of budget than did their sales counterparts. As has been stated, these differences are minor and at this stage of the research no plausible reasons exist. Although Table 7.3 strongly indicates that there were differences in purchasing strategy between successful and unsuccessful profit departments, the extent of these differences are not clearly apparent from this Table. In an attempt to isolate these differences, the purchasing means for each of the categories were calculated. These are set out in Table 7.4.

Table 7.4

Comparative Means of Departmental Purchasing

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
Successful				
- Mth 1	131.7%	72.0%	104.5%	107.7%
- Mth 2	131.5%	102.3%	101.6%	108.1%
- Mth 3	138.3%	109.2%	113.3%	106.1%
Unsuccessful				
- Mth 1	91.5%	50.9%	55.8%	71.9%
- Mth 2	100.7%	67.2%	66.6%	69.3%
- Mth 3	109.0%	69.0%	66.0%	71.2%
Differences				
(Successful - Unsuccessful)				
- Mth 1	47.2%	21.1%	48.7%	35.8%
- Mth 2	30.8%	35.1%	. 35.0%	38.8%
- Mth 3	29.3%	40.2%	47.3%	34.9%

These results, when coupled with those of Table 7.3, show that for a department to generate an above average profit result, purchasing needs to be at or above budget. The differences indicate the large gap in purchasing strategy between successful and unsuccessful sales departments. The extent of these differences were confirmed when the Mann-Whitney test was applied. The results of these are shown in Table 7.5.

Table 7.5

Mann-Whitney Test Applied to
Purchasing Strategies Used
by Successful and Non-Successful Profit Departments

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
- Mth 1	2.8469	2.8566	3.4834	2.9560
- Mth 2	3.0186	4.2403	3.1768	3.8391
- Mth 3	2.3327	5.5794	4.3667	4.7345

As noted, using a 5% level of significance, the results in Table 7.5 confirm that the populations of actual purchases, as compared to budgeted levels, were statistically different. Clearly, failure to purchase at budgeted levels in these early months underwrote a poor profit result. From the evidence in the above Tables, together with the written analysis, it is concluded that Hypothesis Six can be rejected since there was a significant difference in purchasing strategy between these two categories.

It is interesting to examine the above Tables in conjunction with the analysis in Section 7.3.1. That Section dealt with the levels of opening stocks held, and concluded that there was little difference in such holdings between successful and unsuccessful profit departments. It was also shown that, in almost all seasons for both categories, opening stocks were in excess of budget. If this outcome is coupled with the results of this Section, it shows that, for a department to be successful, it needed to have both opening stock and purchases in excess of budget. For this to occur, the OTB controls needed to be ignored and buyer judgement exercised. It is apparent, therefore, that the OTB system does need modification and this preliminary conclusion gives support to the similar

conclusions of the comparative Section (6.3.2) in the last
Chapter.

7.3.3 Closing Stocks

Hypothesis Seven: Average closing stocks of successful
departments do not exceed budget more
frequently than unsuccessful departments.

This Hypothesis explores whether successful profit departments
finished the trading season with stocks in excess of budget
while the reverse was the case for unsuccessful departments.
The testing of this hypothesis is important since the adequacy
of the OTB system will again be brought under scrutiny.

The analysis commences with an examination of the percentage of
departments in each season that have closing stocks in excess
of budget. This data is presented in Table 7.6.

Table 7.6

**Percentage of Successful and Unsuccessful Profit
Departments Finishing a Trading Season
With Stocks in Excess of Budget**

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
Successful	62.9%	69.4%	70.6%	52.9%
Unsuccessful	51.5%	54.2%	40.0%	35.3%
Differences	11.4%	15.2%	30.6%	17.6%

As can be seen in Table 7.6, successful departments more

frequently carried stocks in excess of budget than their
unsuccessful counterparts. Of note, however, is the frequency
that unsuccessful departments exceeded closing stock budgets.
As suggested in Section 7.3.1, such a situation indicates
obsolete stock being carried forward into the next season with
the possible marginal negative effect on profit. To further
analyse this aspect, it was decided to examine the relationship
between closing stocks held and sales made in each season for
each category. This data is presented in Table 7.7.

Table 7.7

A Comparison of Mean Sales
and Mean Closing Stocks

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
Successful				
– Sales	124.7%	132.0%	115.6%	112.5%
– Stock	120.6%	129.2%	134.6%	103.8%
Unsuccessful				
– Sales	95.4%	74.7%	78.0%	64.3%
– Stock	116.1%	116.4%	94.6%	83.6%

An examination of Table 7.7 shows that for successful
departments there is a strong correlation between closing stock
excesses over budget and sales achieved. In all seasons except
one, sales percentages lead stocks. It could therefore be
expected that the risk of stock obsolescence would be low and
that stockturn targets would be achieved. Again, for this
outcome to occur, the formal controls of the OTB system would
have to be ignored and buyer judgement exercised.

Unsuccessful departments did not have mean stocks at the same level as their successful counterparts. While in all seasons mean closing stocks were at lower levels, stocks held as a percentage of budget exceeded sales percentages. This situation identifies an imbalance in the stock to sales ratio and so suggests that there was a lack of productivity in the inventory investment.

To conclude, **Hypothesis Seven is rejected** since successful profit departments did have average closing stocks in excess of budget more frequently than unsuccessful profit departments. Coupled with this conclusion is the fact that successful departments had mean stocks in excess of budget as compared to mean stock levels held by their unsuccessful counterparts. Again, it is apparent that the formal OTB system needs modification if profit maximisation is to occur.

7.3.4 Dependence on Achievement of Sales Budgets

Hypothesis Eight: <u>Successful profit departments do not achieve sales budgets more frequently than unsuccessful departments.</u>

This Hypothesis tests the extent of dependency that departments have on the achievement of sales budgets if profit budgets are to be met. Initially, it may be thought that achievement of a profit budget is impossible without meeting the sales budget. This is not automatically the case, however, since there are other components that interact with profit, these being initial

markup rate, subsequent markdowns, and allowances from
suppliers. If there are savings on budget in any of these
other components, then a department would not need to achieve
the sales budget in order to achieve the profit budget. Table
7.8 shows details of the number of successful and unsuccessful
profit departments in each season that achieved the sales
budget.

Table 7.8

Number of Successful and Unsuccessful Profit Departments Achieving the Sales Budget

	Feb/July 83		Aug/Jan 84		Feb/July 84		Aug/Jan 85	
	No	%	No	%	No	%	No	%
Successful	27	77.1	36	100.0	32	94.1	30	88.2
Unsuccessful	5	15.2	1	2.9	8	22.9	0	0.0

It is clear from Table 7.8 that successful profit departments
did achieve sales budgets more frequently than unsuccessful
departments. **Hypothesis Eight is thus rejected.** However, the
data presented in Table 7.7 shows that not all successful
profit departments achieved the sales budget in all periods.
Likewise, there are a number of profit departments ranked as
unsuccessful that attained the set sales budget. Obviously for
these departments, while attaining the sales budget,
substantial components of the profit budgets were not met
thereby eroding the profit result. The causes of this
situation will be discussed in the next Chapter together with
its impact on the efficient functioning of the OTB system.

7.3.5 Achievement of Gross Profit Rate

Hypothesis Nine: <u>Successful</u> <u>profit</u> <u>departments</u> <u>do</u> <u>not</u> <u>achieve</u>
<u>the</u> <u>gross</u> <u>profit</u> <u>rate</u> <u>budget</u> <u>more</u> <u>frequently</u>
<u>than</u> <u>unsuccessful</u> <u>profit</u> <u>departments.</u>

The justification for the testing of this Hypothesis is based
largely on the same grounds as for the previous Hypothesis. In
this case, however, attainment of the gross profit rate is
under scrutiny rather than sales. Testing of this Hypothesis
will indicate more clearly whether failure to meet the sales
budget is the main reason for poor performance. If this is the
case then it could be expected that the outcome will be largely
inconclusive. Both successful and unsuccessful departments
should have had the same degree of success in meeting gross
profit budgets. Table 7.9 sets out the data relating to the
achievement of gross profit budgets.

Table 7.9

Achievement of Gross Profit Rate Budgets

	Feb/July 83		Aug/Jan 84		Feb/July 84		Aug/Jan 85	
	No	%	No	%	No	%	No	%
Successful	25	71.4	28	77.8	18	52.9	28	82.3
Unsuccessful	1	3.3	6	17.1	1	2.9	3	8.8
Differences	24	68.1	22	60.7	17	50.0	25	73.5

As can be seen in Table 7.9, the results are not inconclusive.
Successful departments clearly attained gross profit rate
budgets more frequently than their less successful

counterparts. **The Hypothesis is therefore rejected.** This
result is important since it suggests that unsuccessful profit
departments reduced profit margins during a season more
frequently than successful departments. It could be that these
reductions have occurred because of inseason imbalances between
sales and stock (see Section 7.3.3). If this is so, it would
have been reflected in the markdown budget. To test for this,
it was decided to establish another minor hypothesis.

Minor Hypothesis Five: <u>Unsuccessful</u> <u>profit</u> <u>departments</u> <u>exceed</u>
<u>markdown</u> <u>budgets</u> <u>more</u> <u>frequently</u> <u>than</u>
<u>successful</u> <u>departments.</u>

The data relating to the testing of this Minor Hypothesis is
shown in Table 7.10.

Table 7.10

Percentage of Successful and Unsuccessful Profit Departments Attaining the Markdown Budget

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
Successful	51.5%	54.3%	35.3%	62.5%
Unsuccessful	11.5%	26.7%	5.7%	12.5%
Difference	40.0%	27.6%	29.6%	50.0%

Table 7.10 shows clearly that successful departments remained
within markdown budgets more frequently than their unsuccessful
counterparts. The differences appear large and the extent of
these become apparent when the markdown means are calculated.
The means are expressed as actual markdowns divided by budgeted

markdowns multiplied by 100. These figures are shown in Table 7.11.

Table 7.11

Mean Markdowns For Successful and Unsuccessful Profit Departments

	Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
Successful	92.3%	96.7%	148.2%	92.0%
Unsuccessful	272.3%	165.6%	352.5%	217.2%
Differences	(180.0%)	(68.9%)	(204.3%)	(125.2%)

These results are further supported when a Mann-Whitney test is applied to the data. The results from these tests are shown in Table 7.12.

Table 7.12

Mann-Whitney Test Applied to Markdowns Taken by Successful and Non-Successful Profit Departments

Feb/July 83	Aug/Jan 84	Feb/July 84	Aug/Jan 85
4.7587	3.7240	4.0108	4.5921

As can be seen, using a 5% level of significance, the results in Table 7.12 confirm that the populations of markdowns, as compared to budgeted levels, are statistically different. Of note, this result is so strong that it is significant even at 1%. **On the basis of the above Tables, the Minor Hypothesis is rejected.** There were major differences between successful and unsuccessful departments. This data provides strong evidence that unsuccessful departments did carry excess stocks relative to their needs. It also indicates another major weakness of the formal OTB model. While the OTB model controls overstocking relative to budget, it does nothing to assist the control of stock relative to the actual environment. If sales

fall off for any reason, it makes sense that ongoing spending be adjusted to cater for the expected future conditions. Such adjustments would be done with the objective of maintaining the stockturn budget and thus minimising the risks associated with overstocking. This argument will be developed further in the next Chapter where the above conclusions will be discussed in conjunction with employee evaluation.

7.4 High Fashion Departments

7.4.1 Introduction

Following the analysis in the last Chapter, it was decided to test for differences that may exist between high fashion and other departments in terms of merchandise flow. In this Chapter, however, the emphasis is on profit, and the objective is to isolate any variables in the OTB model that may cause profitability to be constrained when the two categories are considered. If such variables are isolated then it could be that there is a case for more than one variation of the OTB system to operate in a company in any one trading season.

Hypothesis Ten: The _formal_ OTB system does _not_ impede the profitability of high fashion departments.

To enable a logical testing of data, a series of Minor Hypotheses were established so that an outcome could be derived for Hypothesis Ten.

7.4.2 Selection of Data

The method used to select data was identical to that used in
Chapter 6, Section 6.3.4.2. In summary, two fashion buyers in
the company under study identified 18 high fashion departments.
The 20% criteria was applied which yielded eight departments
from each trading season. The results for all four seasons
were then amalgamated into one database so that conclusions
could be reached. Again, successful and unsuccessful
departmental results were separated.

7.4.3 Opening Stock, Purchases, and Closing Stock

Minor Hypothesis Six: There is no material difference, in
terms of actual versus budgeted opening
stock, between high fashion and other
departments.

Minor Hypothesis Seven: There is no material difference, in
terms of actual purchases as compared
to budgeted purchases, between high
fashion and other departments.

Minor Hypothesis Eight: The average closing stocks of high
fashion departments do not exceed
budget more frequently than those of
other departments.

The data used to test all the above Minor Hypotheses is
summarised in Table 7.13.

Table 7.13

High Fashion Departments
Versus Other Merchandise Departments

		High Fashion Freq. Actual:Budget	High Fashion Mean Actual:Budget	Other Freq. Actual:Budget	Other Mean Actual:Budget
(1)	**Opening Stock:**				
	– Successful	43.8%	88.7%	55.6%	118.5%
	– Unsuccessful	37.5%	83.4%	61.4%	127.6%
(2)	**Purchases M1:**				
	– Successful	43.8%	108.0%	41.1%	111.2%
	– Unsuccessful	18.8%	71.8%	17.4%	66.8%
(3)	**Purchases M2:**				
	– Successful	43.8%	100.1%	54.0%	111.9%
	– Unsuccessful	6.3%	80.6%	24.2%	75.6%
(4)	**Purchases M3:**				
	– Successful	31.3%	97.7%	60.4%	118.8%
	– Unsuccessful	6.3%	79.3%	24.2%	78.6%
(5)	**Closing Stock:**				
	– Successful	50.0%	100.4%	60.6%	125.1%
	– Unsuccessful	25.0%	77.2%	47.1%	103.8%

Minor Hypothesis Six tested whether there was a material
difference, in terms of actual versus budgeted stock, between
high fashion and other departments. As can be seen from an
examination of Table 7.11, there is a material difference
between the two categories. This difference exists for both

the successful and unsuccessful groups. While the majority of high fashion departments commenced a season with stock levels below budget, this is not so for other departments. These departments had mean opening stocks of almost 20% above budgeted levels. **Minor Hypothesis Six is therefore rejected.** From an examination of the data in the Table, other points can be noted. First, there is again little difference between the opening stock levels of successful and unsuccessful departments. This evidence provides further support for the notion that the level of opening stocks plays no significant role in the determination of future profit performance and, as such, its inclusion in the OTB formula must be questioned. Second, the mean opening stocks of unsuccessful departments in the other category were higher than those of successful departments. This situation suggests obsolete stock being carried forward which, in turn, means that past profitability may have been overstated by the amount of the markdowns that would have had to be taken in the coming season to clear the merchandise. In addition, the potential to purchase stock would have been impeded if the OTB model was adhered to. The result from testing this Hypothesis is consistent with that recorded when a similar Minor Hypothesis was tested in the previous Chapter. While the results from high fashion departments were almost identical, successful sales "other" departments had higher mean opening stocks than their successful profit counterparts. In addition, unsuccessful sales "other" departments had lower mean stocks than those of profit departments. These situations add weight to earlier discussions (Section 7.3.1) where it was suggested that there

is evidence that some sales departments trade profit for sales.

Minor Hypothesis Seven examines actual purchases as compared to budgeted purchases. Table 7.11, parts 2 - 4, shows that there was a material difference between high fashion and other departments. While this difference is not apparent in the first month of each season, material differences emerge in months two and three. It is in these months that other departments continued to widen the gap between actual and budget while high fashion departments adopted a reverse strategy. This reverse strategy resulted in these departments, over this three month period, purchasing within budget. Thus, while high fashion departments did not appear to be constrained by the OTB model, this was not the situation for other departments when purchases are coupled with opening stock levels. **Minor Hypothesis Seven is therefore rejected.** This result is again similar to that recorded when a similar Minor Hypothesis was tested in Chapter 6. Although these results are similar, purchasing levels by sales "other" departments were higher than those recorded for profit departments. This situation is also consistent with the previously discussed strategy of trading profit for sales.

The third Minor Hypothesis tests for differences in closing stock levels between the two groups. The data again shows that there were material differences. While high fashion departments contained closing stocks within budgeted levels this was not done by departments in the other group. In this group both successful and unsuccessful departments had mean

closing stocks in excess of budget. **Minor Hypothesis Eight is thus rejected.** Again, this outcome is consistent with that recorded for a similar Minor Hypothesis in Chapter 6. Perhaps the only notable difference between the two outcomes is that sales "other" departments had higher mean closing stocks than profit departments. The high fashion department results were almost identical.

Overall, the results from testing the above Minor Hypotheses show that there were material differences between high fashion and other departments in terms of merchandise holdings and flows. In addition, it has been shown that successful high fashion departments did, on average, achieve their results by operating at set budgeted levels within the OTB model. This was not the case for other departments. It is also interesting to note that 87.5% of successful high fashion departments are included in the overall company successful category. This fact, together with the foregoing discussion, leads to the conclusion that **Hypothesis Eleven is accepted.** Acceptance of this hypothesis means that an argument can be sustained that, for certain objectives such as sales or profit maximisation, there is a case for more than one OTB model to operate in a company at any one time. This possibility will be further discussed in the next Chapter.

7.5 Summary

In this Chapter the OTB system and its impact on gross profit performance has been examined. The objective of the analysis

has been to test whether the OTB system allows profit maximisation. This outcome was seen as desirable since over 57% of major retailers in Australia appear to reward staff for gross profit performance.

The method used to select data was identical to that used in Chapter Six. Again, the 20% most successful and 20% least successful departments for each season were isolated for analysis. These departments were drawn from a total group of nearly 200 departments.

The data analysis, in the first instance, examined opening stock, purchases, and closing stock. As outcomes were established for these variables, the testing was then extended to examine the dependence of profit attainment on both the achievement of sales budgets and gross profit rate budgets. Finally, the effect on the profit performance of high fashion departments by the OTB system was contrasted to that of the non-high fashion departments.

In the first part of the Chapter, two out of three hypotheses were supported by the data. This resulted in several important conclusions. First, it was found that the levels of opening stock held by both successful and unsuccessful departments were similar and so it was concluded that the level of such stock was not an indicator of future profitability. Second, it was concluded that successful departments do purchase ahead of budget much more frequently than unsuccessful departments. Third, successful departments were found to have average

closing stocks in excess of budget more frequently than their unsuccessful counterparts. As a result, it was concluded that the OTB system needed modification if profit maximisation was to be allowed to occur.

The dependence on a strong sales performance for the attainment of the profit budget was then examined. While it was shown that a strong sales performance provides a solid foundation for profit attainment, it was clear that a department could be ranked as successful in terms of profit achievement while at the same time not attaining the sales budget.

The achievement of gross profit rate budgets between the two groups was also compared. It was found that successful departments did achieve these budgets more frequently than their counterparts. The reason for this was then sought and it was hypothesised that markdowns would be greater for unsuccessful departments. This was found to be the case and it was suggested that further modifications needed to be made to the OTB system if such excessive levels of markdowns were to be avoided.

In the final section of the Chapter, the effect on profitability of the OTB system for high fashion departments as compared to other departments, was examined. It was found that differences in outcomes did exist between high fashion and other departments. Of note, it was shown that high fashion departments achieved their results even though they operated at set budgeted levels within the OTB model. This was not the

case for departments in the other category. It was concluded that these results present evidence that there is a case for more than one OTB model to operate in a company at any one time.

This Chapter has completed the analysis of the effect on sales and gross profit performance by the operation of the OTB system. In the next Chapter employee performance evaluation will be discussed. That Chapter will also outline what changes need to be made to the OTB system to enable accurate employee appraisal to occur.

Chapter Eight

**Maximising the Benefits That
Can Be Obtained from the OTB System**

8.1 Introduction

This Chapter principally discusses what changes have to be made
to the OTB system to enable maximisation of benefits to occur
from using the system. Maximisation is assessed in terms of
benefits accruing to both employee and employer. The benefits
that accrue to the employee are embraced in all the intrinsic
and extrinsic rewards that result when favourable performance
appraisal outcomes occur. In this case, the payment of a six
monthly performance bonus was evidence that an employee was
performing up to operational expectations. For an employer,
the potential benefits are increased opportunities for profit
because of lower operational costs and lower levels of business
risk.

The Chapter commences with a review of the bonuses paid to
employees in the period under study. This information will
then be integrated with the findings of the previous Chapters
and the conclusions reached assessed against the objectives of
both the OTB system and the company under study. The
objectives of other companies surveyed will also be reviewed.
Conclusions will then be reached as to whether the OTB system,
as it is now structured, enables these objectives to be met.

Those changes seen as necessary for the maximisation of either profit or sales or the satisficing of both together will be outlined. It is envisaged that different OTB models will apply to each set of objectives. The Chapter will then conclude with a discussion of the effect of these changes on corporate operational costs and levels of business risk.

8.2 Payment of Bonuses to Employees

By way of review, the company under study paid bonuses to buyers that increased annual remuneration levels by between 5.5% and 14.5%. In each season the base bonus was $700. To gain this, a buyer had to achieve all of the sales, gross profit and inventory budgets with the bonus, in practice, being weighted to the achievement of the gross profit budget. If this budget was met, 60% of the bonus was paid. Of the remainder, 20% was paid for attaining the sales budget and 20% for remaining within the inventory budget. Additional levels of bonus could also be earned. If the gross profit budget was exceeded by 15% and both other budgets were met, $1200 was paid. This bonus was increased to $1800 if the gross profit budget was exceeded by 25% and both other budget levels were also attained. Bonuses were paid at the conclusion of each trading season and were seen by buyers to be directly linked to employee performance appraisal.

In the company under study, there was a clear "performance contract" between the employer and employee. This "contract" was effectively reviewed at the end of each trading season when

bonuses were calculated and variations to salary levels made. As can be expected, it was also at this time that changes to buying portfolios were made. These portfolios were rarely reviewed at any other time except when an employee voluntarily resigned. This total scenario caused buyers to focus on those variables subject to measurement and reward: gross profit, sales and inventory budgets. In essence, management gave buyers the resources and then expected budgets, as a minimum, to be achieved. As has been discussed, there is a question as to whether the given resources were adequate to achieve the requested results and so fulfil management's side of the contract. Included in this definition of resources are any management control systems (e.g. OTB) that may be used to guide or control activities of buyers.

The questionnaire results, as reported in Chapter Four, indicated that similar contracts are in place in other retailing companies. The results from 26 companies employing more than 100 staff show that 18 (69.2%) pay incentive payments to buying staff. For the purpose of ongoing discussion, the part of Table 4.10 relating to companies employing more than 100 staff is reproduced below as Table 8.1.

Table 8.1

Payment of Rewards for Budget Attainment

	No	%
Sales only	2	11.1
Sales and Inventory $	1	5.6
Sales, Inventory $, Gross Profit(GP) $	2	11.1
Sales, Inventory $, GP $, GP Rate	2	11.1
Sales, Inventory $, GP Rate	1	5.6
Sales and GP $	7	38.9
Sales, GP $, GP Rate	2	11.1
GP $ only	1	5.6

As can be seen from this Table, with the exception of three companies all others make incentive payments for the achievement of more than one variable. While only one other company pays incentives for achievement of exactly the same variables as the company under study, it will be noted that 33.3% of those surveyed link attainment of the inventory budget with either sales or profit budgets. It has been suggested in previous Chapters that it is this attainment of linked budgets that is very difficult to achieve if the OTB system is in use.

The level of difficulty that buyers in the case under study found in attaining their performance contracts can be seen from an examination of Table 8.2. This Table sets out the bonuses paid over the four periods as a proportion of the total departments in the company at that time.

Table 8.2

Bonuses Paid By Department as a Proportion
Of Total Departments

	Bonus Paid	Total Depts	%
Feb/July 83	49	177	27.7
Aug/Jan 84	72	184	39.1
Feb/July 84	37	178	20.8
Aug/Jan 85	47	171	27.5

As can be seen, the number of departments receiving performance bonuses, as a percentage of the whole, was consistently low. In each season, it would have been expected that, in each season, many more departments would have attained budgeted levels. This is because of the rewards on offer to buyers if such levels are attained. While many variables can cause poor performance, in this instance, it is suggested that the demands of the OTB system have caused levels of performance that are lower than would be reasonably expected. This suggestion is based on evidence provided in the last two Chapters.

As an extension of this analysis, it was decided to isolate how many of the departments receiving bonuses were paid the full basic bonus of $700. This data is shown in Table 8.3.

Table 8.3

Number of Departments Receiving the Full Basic
Bonus as a Proportion of Total Departments Paid a Bonus

	Feb/July 83 Depts	Aug/Jan 84 Depts	Feb/July 84 Depts	Aug/Jan 85 Depts
Full Bonus Paid	15	25	10	16
Total	49	72	37	47
%	30.6	34.7	27.0	34.0

It is clear from the above Table that the number of departments receiving $700, as a percentage of those departments receiving a bonus, was also low.   The extent of this becomes more evident when the number of departments paid the full basic bonus of $700 is expressed as a percentage of total departments in the company.   The highest result occurred in the August - January 1984 period with 13.6% and the lowest in February - July 1984 with 5.6%.   In an attempt to isolate the reasons for this, the levels of achievement for each of the bonus-related variables was analysed.   It was found that, for those departments paid a bonus, it was the inventory budget that was least frequently achieved.   These results are shown in Table 8.4.

Table 8.4

Number of Departments Receiving the Full Basic Bonus Not Achieving the Inventory Budget

	Feb/July 83 Depts	Aug/Jan 84 Depts	Feb/July 84 Depts	Aug/Jan 85 Depts
Budget Not Achieved	27	44	28	26
Total No. of Depts Receiving Any Bonus	49	72	37	47
%	55.1	61.1	75.7	55.3

As a result of these findings, it could be suggested that maybe bonuses no longer should be partly dependent on achievement of the inventory budget.   It is argued, however, that the problem is more profound than this.   The major reason for departments not achieving budget is that the workings of the OTB model are not consistent with the objectives they are trying to meet.

The objectives of retailing companies were discussed in Chapter Four. In summary, of those retailers surveyed, 73.1% sought to maximise sales so long as minimum profit levels were attained. In addition, 34% of respondents also sought achievement of the budget as an objective, but, in every instance, this objective was coupled with either the maximisation of sales or gross profit dollars. These reported objectives were also compared with those variables identified by respondents as used for employee performance measurement purposes. In almost every case there was consistency between both sets of variables.

It is the objectives of a company that should specify the management control systems that are to be used as direction setters in the company (Buckley and McKenna, 1972). Such direction is given by the collection of information, subsequent processing, and the provision of timely feedback to managers before actions are taken. This is the sequence of events for the OTB system.

As explained earlier, the variables in the OTB model are initially based on merchandise budgetary items. With the exception of closing inventory, these are updated in arrears as actual figures become available. The reason for closing inventory not being formally adjusted at any stage of the season can be found in the historical objective of the system: that is, to maintain inventories at budgeted levels (Lewison and De Lozier, 1986; Marquardt et al., 1983). Control needs to

be exercised in this manner since it is believed this would enable optimal profitability to occur.

This objective of the OTB, however, is at variance with today's corporate objectives. No longer do companies believe that holding inventory at budgeted levels will achieve optimal profitability. If this was the case, and it was further linked to a desired objective of maximisation, then stockturn rates could become quite unrealistic and unachievable. It is therefore important that the OTB model allows such maximisation, thus enabling both employer and employee to meet desired goals. To do this, it is necessary that changes are made to the model and these are now discussed in greater detail.

8.3 Maximisation of Desired Objectives

In making changes or recommendations to the OTB model, the fact that objectives differ between companies must be allowed for. As reported earlier, while most companies seek to maximise sales so long as minimum profit levels are attained, there are many that plan primarily to maximise either profit or sales.

It is proposed that the initial part of the discussion will concentrate on those changes that need to be made if the OTB system is to allow the attainment of maximisation objectives. It is suggested that these changes will remove a constraint on employee performance and so enable employees to attain budgets without the design of control systems inhibiting such

performance. The latter part of the discussion will extend
this earlier part and assess what further changes should be
made to the system to allow for those seasons when trading
results are poor. The purpose of this is to minimise the
ongoing business risk to the company by ensuring that inventory
adjustments are made before major financial outlays on unneeded
purchases are incurred.

To enable the ongoing discussion to proceed in an orderly
manner, each component of the OTB model will be analysed
separately. Since it is the purchase of new stock that has
been shown to have a strong correlation with on-going success,
this will be the first variable to be discussed.

8.3.1 Purchases

In both Chapters Six and Seven it was found that actual levels
of opening stock as compared to budgeted stock levels did not
impact positively or negatively on either sales or profit
performance. Further, it was concluded, on the other hand,
that purchasing levels did have a significant effect on sales
and profit performance. This means that if a department
commences a trading season with opening stock at 140% of
budget, a buyer should be able to spend his or her purchases
budget in full in the initial months of the new period. Strong
evidence that departments were successful if they spent at or
above budget was produced in both Chapters Six and Seven.

It is also seen as important that minimum levels of purchases

spending be established. This minimum level would be expressed as a percentage of the cumulative purchases budget to a given point in time. The purpose in establishing such a level is to identify the percentage of budget that should be spent if favourable outcomes are to occur. The upper level of purchases spending would obviously be 100% of budget.

In this research, the data relating to the most successful sales and profit departments for the selected company in all four seasons, was used. There were three groups of data analysed. First, those departments identified as most successful in both sales and profit in any one season. Since these departments have achieved in terms of both sales and profits, their purchasing strategies can be analysed. This would be done in order to establish the minimum levels of purchasing used. Second, the strategies of those departments identified as most successful in sales performance were analysed. It is argued that, for these departments, sales performance was pursued in preference to profit, and so the conclusions reached will identify the minimum purchasing level to be targeted if this outcome is sought. The third group concentrated on successful profit performers who failed to achieve high levels of sales beyond budget.

i) Successful Sales and Profit Departments
First, those departments identified as being most successful in terms of both sales and profit were analysed. It is argued that this grouping closely reflects the common objectives of those major retailers who seek to maximise sales so long as

minimum levels of profit are generated.

The purchases of these departments were analysed over four seasons and, for each season, the percentage of purchases spending for each department, as compared to budget, was determined. This analysis was done on a month by month basis for the first three months of each season. The results were then collated and the cutoff point was established at the percentage break beyond which 70% of departments had purchased. While this figure of 70% was mainly arbitrary, the selection of it was based on Pareto's analysis (Pareto, 1971). In addition, such a figure was deemed high enough to allow reasonable conclusions to be reached. It was also decided, for two major reasons, that the second month was to be used as a benchmark. First, by this time all initial deliveries for the season would be received, and second, purchasing strategies would still be unaffected by sales performance.

For this group, it was found that the minimum purchasing level used was 80%. The results of this analysis is displayed in Table 8.5. It shows the number of successful departments in each of the first three months of a season that spent over 80% of the purchases budget.

Table 8.5

Number of Successful Departments Spending
Over 80% of the Purchases Budget

	Month One		Month Two		Month Three	
	No	%	No	%	No	%
Feb/July 1983	19	90.5	20	95.2	21	100.0
Aug/Jan 1984	12	42.9	25	89.3	28	100.0
Feb/July 1984	15	57.7	18	69.2	25	96.2
Aug/Jan 1985	18	69.2	23	88.5	25	96.2

These figures can be compared with those for departments that were categorised as unsuccessful in terms of both sales' and profit over the same period. This data is shown in Table 8.6.

Table 8.6

Number of Unsuccessful Departments Spending
Over 80% of the Purchases Budget

	Month One		Month Two		Month Three	
	No	%	No	%	No	%
Feb/July 1983	9	50.0	10	55.6	12	66.7
Aug/Jan 1984	4	14.8	8	29.6	6	22.2
Feb/July 1984	3	20.0	2	13.3	4	26.7
Aug/Jan 1985	5	22.7	7	31.8	5	22.7

A comparison of these two Tables shows how great the differences are between the figures presented. In Table 8.6 much of the low level of purchasing is caused by the constraints placed on buying by the excessive levels of opening stock. In a few cases, departments did not face such a constraint and the purchasing shortfall seems to have occurred simply because purchase orders were not placed. This data gives further support to the conclusions reached in earlier

Chapters and also the suggestion that excesses in opening stock should not dilute ongoing purchasing capacity.

It is argued that purchases should be subject to even greater control than implicit in the formal OTB model, given the outcomes presented. This additional control could be in the form of a monthly report listing those departments with committed purchases at a figure of, for example, less than 80%. While this report would be a by-product of the OTB system, it would give timely feedback to a buyer on an issue that has a major influence on on-going performance appraisal.

While the above analysis has addressed those objectives that seek a compromise of sales and profit maximisation, the requirements of other objectives must also be addressed. The first is the situation where a company wishes to maximise sales, and the second, where profit maximisation is the objective.

ii) Successful Sales Departments

The methodology used to analyse the purchasing strategies of those departments maximising sales was identical to that used for the previous group. It must, however, be noted that this analysis is different to that undertaken in Chapter 6. In that Chapter, all departments comprising the most successful sales group were analysed and included departments that were also identified in the most successful profit category. These departments could not, therefore, be included in the analysis to be undertaken.

Unfortunately, it was not possible to establish a representative purchasing level for this group for two reasons. First, there was a disproportionate number of departments that had an actual opening stock level of less than 50% of budgeted opening stock and so, in order to acquire adequate levels of trading stock, they frequently spent well in excess of budget. Second, a number of departments achieving high sales commenced the season with stock levels over 250% of budgeted levels. This high level of stock was then partly compensated for by decreasing purchases of new stock. Sales were then stimulated by taking markdowns greatly in excess of the markdown budget. It should be noted that neither of these strategies were profitable, and evidence of the level of business risk exposure can seen in the fact that over the four seasons, only two of the 39 departments included in the analysis achieved their gross profit rate budget, let alone their gross profit dollars budget.

iii) Successful Profit Departments

These results can be contrasted with those from departments that were identified as successful profit departments only. As can be expected from the discussion in Chapter 7, the percentage of the purchases budget spent was lower than that for successful sales departments. It was also lower than the group that satisficed both sales and profit (Table 8.5). Again, the methodology was identical to that used for the other groups. Although the analysis did not generate the same conclusion as for the sales maximising group, sample groups

were small, and so outcomes could not be adopted with total certainty. Even so, it was found that the minimum percentage committed by the majority of the departments was 70%. This contrasts with the 80% for those departments deemed successful on both variables. This lower percentage again reflects the conservative approach of those departments more concerned with profit than sales outcomes. This level of conservatism is also reflected in the attainment of gross profit rate budgets where over the four seasons only one department out of 32 failed to meet budget.

In general, it is argued that from the outcomes above, if a company wishes to maximise profit, a minimum of approximately 70% of budget should be committed in all departments during the first three months of a season. At all times, strict controls would also have to be in place so that gross profit rate budget variables can be maintained within budgetary limits. Obviously this is a minimum figure and the intent is that all the initial budget should be spent. For those companies seeking to maximise sales, there may need to be a willingness to spend over budget. This possibility was evident in the analysis undertaken. It is stressed, however, that the formal OTB system is a control system and its objective is control within predetermined limits.

8.3.2 Opening Stock

As noted in Section 8.3.1, it is suggested that the lower of actual or budgeted opening stock, rather than actual stock, be

included in the OTB calculation. This suggestion is supported
by the conclusions in Chapters 6 and 7 that varying levels of
opening stock do not influence ongoing sales or profits. Only
in absolutely extreme cases does excess stock have any
influence and, for this to occur, OTB controls would have had
to be previously ignored.

This suggestion is important in terms of performance
evaluation. It means that an employee's performance is
starting to be based on current trading decisions. In the
present OTB model, only actual opening stock figures are used
in the equation. These figures could be 250% over budget and
so the employee in the coming season has to quit this excess
and still meet performance targets. Frequently, this employee
is new to the department since the previous encumbant has been
moved because of the poor trading results. It is therefore
considered important that this change be made since, if it is
not, the flow-on effects from the decisions of earlier seasons
may mean that future trading efforts are incorrectly assessed.

This suggestion has a further flow-on effect. If opening stock
is included at the lower of budget or actual amount, any stock
in excess of budgeted levels will cause ongoing sales figures
included in the OTB model to be overstated. This will result
in an increase in the forward OTB limit since there will not be
an effective matching between sales and purchases figures. To
compensate for this, management should plan over which period
this excess should be quit at the commencement of the season.
Once this is done, budgeted reductions should be made to those

monthly sales included in the OTB model. In conjunction with this, increases in the relevant markdown budgets will probably also have to occur. If this is not done then the buyer being appraised in the current season will be reluctant to take any additional markdowns on the excess stock that may be required in order to sell it. If the existing markdown budget is used for this purpose rather than for the control of current stock pricing, sales could fall because of inflexibility in the pricing structure that, in turn, has occurred because the buyer is seeking to preserve gross profit margins. Alternatively, if markdowns on excess stock are deferred, then the ongoing difficulties in selling this stock would also compound.

8.3.3 Closing Stock

As discussed earlier, the closing stock figure in the OTB model is the original budgeted figure. It is not formally adjusted in either direction once the season commences. Even so, the results in Chapters 6 and 7 showed that both successful profit and sales departments continually complete a season with stocks in excess of budget. In the company under study, this outcome was shown to be a prime cause of buyers not being paid the total available bonus. Such a situation can have serious demotivating effects on staff if they believe that the failure to achieve targets is because of conflicting variables in the performance appraisal process.

In this case, over the four seasons, 37.4% of departments not meeting the closing inventory budget did meet the stockturn

budget. The budgeted stockturn rate is determined on the optimal sales to stock ratio at original sales expectations, and not at the achieved figures which in all cases were higher. It is therefore concluded that the budgeted closing stock figure is not appropriate since, while optimal stock to sales ratios were achieved by some departments, bonuses were not paid because budgeted figures were not attained.

It is therefore suggested that the closing stock not be fixed at a previously set budgeted level. Instead, this figure should adjust in line with sales activity and so maintain the targeted stock to sales ratio. This adjustment should not only be reflected in the closing stock figure at the end of the six month period, but also in the closing stock figures at the end of every reporting period. In addition, this adjusted figure should be that used for any performance appraisal that includes closing stock levels as a variable. The effect of this suggestion is two-fold. First, an adjustment that causes an increase in closing stock will free up purchasing power. Since this would occur at a time when sales activity is exceeding previously set budgets, such additional spending would potentially increase the possibility of yet further sales increases. If the adjustment decreases the closing stock, this will slow purchasing and so act as a restraint, thus forcing buyers not to purchase beyond market demand. Second, buyers will be positively appraised if they achieve sales budgets and have closing stocks in excess of the original budgeted amount. This would overcome the negative feedback received in interviews with buyers when they collectively stated that it

was impossible to achieve greatly in excess of the sales or profit budget and still be paid the full bonus. Indeed, many confirmed that this situation cost them the entitlement to the higher bonuses even though others with inferior, but more balanced outcomes, had received them. This view was supported by data analysis subsequently undertaken.

8.3.4 Sales

At the commencement of a season, sales are included in the OTB model at the budgeted level. Although this figure is used continually throughout the season, a further adjustment to the OTB is made if sales deviate from budget. If a deviation occurs, the difference between the actual and budgeted amount is included as an adjustment to the level of OTB. This adjustment can obviously either increase or decrease the available OTB.

This adjustment is, however, calculated on a retrospective basis. It is effectively increasing or decreasing the future spending limit as a result of a historical difference that has occurred between actual and budgeted sales. It takes no account of trends that may be developing. For the company under study, some of these adjustments were large since, at the very minimum, sales budgets were finalised at least four months before the start of the trading season (see Section 5.3.1). This practice also appears common in other companies (see Section 4.3.2).

It is suggested that the OTB model should formally incorporate a mechanism to allow trends in sales to be adjusted. Although Berman and Evans (1989) did note that some larger retailers do use statistical methods to assist in the forecasting of sales, there is no evidence that such methodology has been included in the OTB model by companies generally. The benefit in making such a change to the model is that adjustments for inaccurate forecasting can be made at the earliest opportunity and, if necessary, timely markdowns taken to quit excess stock.

An example of such a forecasting method is one based on time series principles that includes adjustments for seasonal factors. However, a specific recommendation as to which forecasting system should be used is considered outside the scope of this Thesis.

This recommendation has a further flow-on effect to the OTB model. If sales are forecast to increase or decrease then, to be consistent with the discussion on closing stock (Section 8.3.3), an adjustment should also be made to the closing stock budget to enable the maintenance of the budgeted stock to sales ratio.

8.3.5 Planned Reductions

Planned reductions include markdowns, anticipated stock shortages, and any discounts that are allowed to privileged customers (Section 4.3.4). In the OTB model, these reductions are included as fixed amounts and, as in the case of other

budgets, are normally finalised some four months before the commencement of a trading season.

It is suggested that the level of planned reductions in any OTB calculation, be directly linked to sales. Such a link would not only be to budgeted sales, but also to any forward adjustments made as a result of output from a forecasting model. Although any adjustments to planned reductions are likely to be small in contrast to those for sales, those made will add further control to gross profit rates and the direct flow-on effect to trading profitability. These refinements will also add consistency between the feedback received from the OTB system and final gross profit results.

8.3.6 Purchase Orders Placed But Not Yet Received

In the OTB system, the OTB limit is reduced every time a purchase order is processed. This reduction is for 100% of the value of the order regardless of the stipulated delivery date. For many departments, especially those trading in fashion and imported merchandise, these delivery dates can be for a number of months ahead. There are therefore obvious risks of non-delivery associated with such a time line.

It is suggested that the value of purchase orders placed but not yet received be discounted to allow for this risk of non-delivery. This rate of discount will vary by department and by company. To establish what rates should be used, the history of non-deliveries will have to be established. Such an

adjustment has obvious advantages for both the employer and employee. First, it means that purchase budgets are more likely to be fully spent in the opening months of a trading season. Second, for the employee, the risks of non-delivery affecting performance appraisal are reduced if not almost eliminated.

8.3.7 High Fashion Departments

In both Chapters Six and Seven the OTB system was analysed with a view to establishing whether the system allows the objectives of high fashion departments to be met. In both Chapters it was concluded that maximisation did occur even though the OTB system was in use. While acknowledging this outcome, it is suggested that the recommendations set out in the foregoing sections should also be adopted for high fashion departments. As previously stated, these recommendations free up purchasing potential and in those situations where budgeting of sales has been inaccurate, the recommendations will allow rectification at the earliest opportunity. There were isolated instances of such unrealistic budgeting in the data analysed in relation to high fashion departments.

8.4 Additional Benefits for the Employer

While the above recommendations focus on changes that should be made to the OTB system to enable correct employee performance appraisal, these changes generate a number of benefits for the employer.

First, by releasing the OTB spending limits and also seeking to use closing inventory targets based on desired stock to sales ratios, the motivation of employees will improve. This improvement will come about because targets will no longer be seen as constrained by a system, but rather quite achievable. In addition, motivation will improve because employees will realise that, with constraints removed, the system enables and encourages maximisation to occur.

Second, since original sales budgets would be moderated for sales trends that have developed since the formulation of the budget and if a department is not going to meet budget, closing stocks for each of the forward months would be reduced. These reductions would be made to ensure that stock to sales ratios are maintained during the remainder of the season. The benefit for the company is that the required investment in stock would be reduced. This would free up cash flow and save on the costs of funding working capital.

For the company under study, this effect was calculated for two seasons. In one season, the sales budget for the company was exceeded by 0.8% while in the other, the budget was not achieved by 7.6%. These two results represent the opposite ends of the spectrum in terms of the four seasons analysed. For each season, those departments that failed to achieve the budgeted stock to sales ratios were identified. The difference between the budgeted ratio and the actual for each department was then calculated, and this applied to the average level of stock held for the season. For the more successful season, it

was calculated that $3,125,000 of average stock on hand was non
productive while, for the other season, the figure was
$4,100,000. These figures represent 13% and 17% of inventories
held. Apart from the freeing up of this working capital for
other purposes, if these amounts were repaid to company
lenders, who were then lending at 15% per annum, the annual
saving on interest alone for this company, would have been
approximately $540,000.

8.5 Summary

The Chapter commenced with a review of the bonuses paid to
employees over the four trading seasons. The payment of a
bonus in this company was evidence that an employee had met the
required performance levels. This analysis is important to the
appraisal of the OTB system since all employees were subject to
this system in determining eligibility for a bonus.

The number of departmental buyers receiving a performance
bonus, in part or full, was consistently low when compared to
the total number of buyers eligible. In percentage terms, the
range was from 20.8% to 39.1%.   When this analysis was
extended it was found that very few departments, expressed as a
percentage of total departments, were paid the full basic bonus
of $700. The range was from 5.6% to 13.6%. Further analysis
determined that it was the inventory budget that was achieved
most infrequently. It was concluded that this analysis
confirmed that the OTB model did not allow for maximisation, if
desired, and so changes were required if such objectives were

to be attained.

The remainder of the Chapter discussed what changes should be made to the OTB model if maximisation objectives are to be achieved. These suggestions concentrated on every component of the OTB model. The main suggestions were that:

(1) the available dollars to spend in a season should not be decreased by any excess of actual opening stock over budgeted levels;

(2) the closing stock budget should adjust in line with sales activity and maintain the targeted stock to sales ratio;

(3) the sales budget should be adjusted to allow for trends that may be developing;

(4) the planned reductions budget should be linked to the sales budget and so any changes made to the sales budget would have a flow-on effect;

(5) the value of purchase orders placed but not yet received be discounted to allow for the risk of non-delivery.

A further suggestion was that minimum levels of purchases should be set for each department, since it was found that achievement of these levels was closely correlated with the attainment of objectives.

The Chapter concluded with a discussion of the additional benefits that would accrue to the employer if the recommendations were adopted. First, it was suggested that the motivation of employees would increase if spending limits were released and targets seen as achievable. Second, by linking

the closing stock budget to the stock to sales ratio, working capital would be freed up if departments were not performing to budget.

Chapter Nine

The Retail Method of Inventory Valuation

9.1 Introduction

In this Chapter the effect that accounting control and
measurement systems have on the performance evaluation of
retail employees is analysed further. In the three previous
Chapters, discussion was concentrated on the OTB. Conclusions
were reached as to whether that system enables employees to
maximise performance. In this Chapter the focus of attention
now moves from the control system (OTB) to an analysis of the
RIM - a measurement system.

The Chapter commences with a discussion of the linkage between
the OTB system and the RIM. This linkage is used by the
majority of Australian retailers and is the reason why both
systems must be jointly analysed if conclusions are to be
reached on their suitability for employee performance
appraisal. From this initial discussion, an overview of the
various models of the RIM is then developed. As will become
apparent at an early stage, one of the primary differences
between the models is the treatment of markdowns. The
rationale supporting each treatment will be outlined before an
analysis of the data.

Since markdowns are a key pivot in the RIM model, this is the
focus for the balance of the Chapter. Initially, the
justification for markdowns being taken is reviewed. This

theory is then tested against the case data and the Chapter
concludes with a discussion of the findings.

9.2   The OTB and RIM

Both the OTB and the RIM are used extensively in Australia by
major department store operators. As discussed in Chapter 3,
92% of companies responding to the questionnaire use the OTB
while 85% use the RIM. All companies using the RIM also use
the OTB as linked systems.

The OTB is a management control system while the RIM is a
method of valuing stock. Because they are generally used in an
interlocking manner, they jointly have a strong impact on
employee performance measurement. As demonstrated in the
previous three Chapters, the OTB can inhibit the maximisation
of sales or profit performance. This outcome primarily arises
because funds to purchase new stock can be artificially held
back by the system. Likewise, as will be discussed in this and
the following Chapters, the RIM can impact on employee
performance measurement since, in given circumstances, it can
generate an incorrect view of a buyer's performance. It is
therefore reasoned that this total scenario can mean that the
performance of many Australian retail buyers is incorrectly
assessed at the close of each trading period and hence rewards
are unfairly distributed. It can also mean that desired
motivational and behavioural reactions are seriously distorted.

9.3   A Review of the Retail Inventory Method

As stated in Chapter Three, the RIM is a method of valuing inventory. It translates the value of closing stock, at retail values, to a cost valuation. The cost valuation is then used as input to the process of establishing profit and loss results.

There are five principal steps involved in the valuation of inventory using the RIM:

i)   The inventory handled (i.e. both opening stock and purchases) during the trading period is established at both cost and retail values.

ii)   A "cost multiplier" is determined. This is the reciprocal of the markup factor between the cost and retail prices.

iii) All deductions from the retail value of the inventory handled are determined. These deductions are normally expressed at retail value only and include factors such as markdowns, sales, and theft of merchandise.

iv)   The closing inventory is established at retail value. This is done for both theoretical and actual inventories. Obviously, where stock shortages occur there will be a difference between the theoretical and actual inventory valuations.

v)   The cost multiplier is applied to the closing inventory. This is done with an objective of restating the retail value of closing stock on a cost basis.

As discussed in Chapter Three, there are six principal

variations of the RIM. Fundamental to these variations is the treatment of markdowns within each method (see Section 3.5.2).

9.4 The Effect of Increased Intakes on Increased Markdowns

As reported in Chapter Four, the questionnaire results indicated that all respondent retailers using the RIM method adopt the variation outlined in AAS2. In review, this variation does not implicitly acknowledge that markdowns can occur because of initial overpricing, but rather sees markdowns as an outcome associated with obsolescence factors. In recognition of this, the AAS2 method seeks to preserve original markup margins in all situations, factual or otherwise. As was suggested in Chapter Four, there are occasions when markdowns may occur because merchandise was originally overpriced. This could be a single occurrence or it may result from a company directive that, in general, markups be increased. If this occurs, it is argued that markdowns would not arise from obsolescence but from inappropriate pricing. Such a situation would therefore demand, in terms of consistency, that markdowns be treated differently in the RIM model if the information generated by the method is to be used for performance appraisal.

Hypothesis Eleven: Sharp increases in initial markups between trading periods do not cause subsequent increases in markdowns.

9.4.1 Selection of Data

The financial data from all departments was considered for
analysis. Not all departments were used, however, for several
reasons. First, all the data relating to shoe departments was
excluded since in these departments, the RIM method was not
used. Second, the perfumery departments were deleted because
the company was able to return excess merchandise from these
departments to the distributors. Such a situation obviously
minimised any markdowns to which these departments would be
exposed. Third, a number of the electrical departments only
started to use the RIM late in the period under analysis.
Finally, those departments for which there was no data
available, for either the previous or the following trading
season, were deleted. This situation was minimal but normally
occurred when new departments were created. In summary, the
number of departments analysed did vary from season to season
and ranged from 119 to 132.

9.4.2 Movements in Intake Rates

The frequency with which intake rates increased and decreased
over the previous trading period, from Summer 1983 to Winter
1984, is set out in Table 9.1. An intake rate is the
reciprocal of the initial markup that is applied to the cost of
an item of merchandise. For example, if a department has an
initial markup of 40%, the intake rate will be 28.57% (100.0 +
40.0 = 140; 100 / 140 = .7143; 1.00 - .7143 = .2857).

Movements in an initial markup rate will, therefore, cause
movements of the same proportion in the intake rate.

Table 9.1

Increases in Intake Percentages

Intake %	Winter 83		Summer 84		Winter 84	
	Dept No.	%	Dept No.	%	Dept No.	%
Below 0%	75	63.1	20	15.7	38	28.8
0 - 2.9%	23	19.3	20	15.7	40	30.3
Sub-Total	**98**	**82.4**	**40**	**31.4**	**78**	**59.1**
3 - 4.9%	8	6.7	22	17.3	17	12.9
5 - 9.9%	7	5.9	47	37.0	23	17.4
10 - 14.9%	1	.8	12	9.5	7	5.3
Over 15%	5	4.2	6	4.8	7	5.3
Total	**119**	**100.0**	**127**	**100.0**	**132**	**100.0**

As can be seen from Table 9.1, there were sharp increases in
intake rates in both the Summer 1984 and Winter 1984 seasons.
This outcome was expected since in an interview, the
Merchandising Director advised that this was a tactical plan
for both of these seasons. As he stated, the company expected
to increase total corporate gross profit dollars by
implementing such a strategy. In these seasons 68.6% and 40.9%
of all analysed departments increased their intake rates by
over 3%. These figures compare with 17.6% in the Winter 1983
season. This figure of 3% was arbitrarily chosen as a
threshold for the purpose of identifying the number of
departments, in each season, that sharply increased intake
rates. This selection was based on the data shown in Table
9.1.

To enforce the extent of these increases, it should be noted
that the Winter 1984 increases are calculated using, as a base,

the already increased Summer 1984 intake levels. Further

analysis revealed that 56% of all departments increased intake

rates in **both** seasons.

9.4.3 **Methodology**

The data was analysed using multivariate analysis with the

dependent variable being the percentage increase in markdowns

in period one over the previous period. Specifically, the

methodology outlined **by Gross and Peterson (1983, p.169)** was

used. The purpose of using this statistical process was to

establish what variables caused markdown fluctuations in the

data analysed. A two-tailed test was used with a 10% level of

significance. Data from three seasons only was analysed since

intake rates for Summer 1985 were not made available by the

company. Four independent variables were used, these being:

I Percentage variations in the ratio of opening stock to
   budgeted sales from period zero to period one.

II Percentage of actual stock held at month five of a six
   month trading season over budgeted levels.

III Percentage increase in closing stock from period zero to
   period one.

IV Percentage increase in initial gross profit margins
   (intakes) from period zero to period one.

Independent Variable I is a measure of obsolescence since it

quantifies the change in the levels of opening stock, at retail

values, to budgeted sales from period to period. An

alternative measure could be the percentage of opening stock to

budgeted sales within any given period. The difficulty with this possible alternative, however, is that variations in stockturn rates between departments do occur, and thus a relative measure is needed. It was anticipated that this independent variable would be shown to be a significant contributor to markdown levels since any major movement in the data would signify changes to levels of obsolescence risk for a given department.

Independent Variable II was included as a possible cause of pressure to increase the incidence of markdowns should actual stock significantly exceed budget as a trading season draws to a close. It is expected that such a situation would only cause pressure if it was perceived by the buyer that stocks had to be cleared, and that only minimal stocks could be carried forward into subsequent seasons. Thus, this variable may only prove to be significant in certain situations and product categories, such as products with a high fashion content.

Independent Variable III is expected to be statistically significant if closing stock levels are allowed to increase when the only alternative is to take markdowns and clear the stock. Likewise, if comparative closing stock ratios decline then it could be expected that markdowns will increase for that period. Such an increase in markdowns would be inversely related to the decrease in the risk of obsolescence that would normally be carried forward into subsequent periods.

Finally, Independent Variable IV is the variation in intake

rates between periods. In terms of Hypothesis Eleven, this is the most important variable since, if it is shown to be statistically significant, sound reasons will be able to be advanced as to why a single RIM model is inadequate for the measurement of performance appraisal.

9.4.4 Data Analysis

As noted in section 9.4.3, data from three trading seasons was analysed. The objective of this analysis was to test Hypothesis Eleven and isolate for each season those variables that had a significant influence on markdowns.

i)   Winter 1983 Season

The analysis for the Winter 1983 season is shown in Table 9.2. In this season 21 departments increased intakes by more than 3%.

Table 9.2

Winter 1983 With Markdowns Being Regressed Against Four Variables In Departments Increasing Intakes By More Than 3%

	Coefficient	Std Error	T-Statistic
Intercept	-284.2144	205.7113	-1.3816
Os/Cos	0.1884	0.0431	4.3670***
5m/Bud	0.0821	0.2420	0.3393
Inc. L.year	-0.3328	0.1278	-2.6036**
Intake	3.9948	1.9394	2.0598*

R-Squared: 0.783904
F-Test   : 13.60342

*   Significant at 10%
**   Significant at 2%
*** Significant at .1%

Os/Cos: Independent Variable I
5m/Bud: Independent Variable II
Inc. L. Year: Independent Variable III
Intake: Independent Variable IV

An examination of Table 9.2 shows that three variables (opening stock, variation of closing stock between periods, and intakes) were significant at 10%. Also, the F-Test indicates that the relationship between these variables is significant. These three variables were then further regressed against markdowns. The results are displayed in Table 9.3.

Table 9.3

Winter 1983 With Markdowns Being Regressed Against Three Variables In Departments Increasing Intakes By More Than 3%.

	Coefficient	Std Error	T-Statistic
Intercept	-301.3522	193.8228	-1.5547
Os/Cos	0.1923	0.0404	4.7593***
Inc. L.year	-0.3272	0.1231	-2.6558**
Intake	4.2309	1.7595	2.4046*

R-Squared: 0.782246
F-Test   : 19.15907

```
*    Significant at 5%
**   Significant at 2%
***  Significant at .1%
```

The results in Table 9.3 are all statistically significant at 5% or less. The pattern of significance is interesting since, not only is obsolescence (variation in opening stock over budgeted sales) critical in the determination of markdown levels, but also both intakes and variations to levels of closing stock. Thus, if a premature decision to take no further markdowns in this season is taken by a buyer, the decision is implemented by increasing closing stock levels as an alternative to taking additional markdowns. Of importance to this section of the research is the fact that increased intake levels do cause increased markdowns. As has already been stated (Section 3.6), this contrasts with statements in AAS2 where it is inferred that the only significant reason for markdowns is obsolescence. If similar outcomes occur in the following seasons, it can be argued that any quantitative assessment of a buyer's performance must therefore make allowance for this finding. Such a conclusion would strongly

suggest that the AAS2 method is not appropriate as a variation to be used for the purposes of performance appraisal.

ii) Summer 1984

The data relating to the Summer 1984 season is shown in Table 9.4. In this season 87 departments increased intakes by more than 3%.

Table 9.4

Summer 1984 With Markdowns Being Regressed Against Four Variables In Departments Increasing Intakes By More Than 3%

	Coefficient	Std Error	T-Statistic
Intercept	-260.5843	116.7234	-2.2325
Os/Cos	0.0547	0.0283	1.9356*
5m/Bud	-0.1780	0.1904	-0.9351
Inc. L.year	0.0279	0.1365	-0.2043
Intake	3.4470	1.0562	3.2637**

Corrected R-Squared: 0.107430
F-Test   : 3.6178

* Significant at 10%
** Significant at 1%

An examination of this Table indicates that both opening stocks, as a percentage of budgeted sales, and intakes are significant at less than the 10% level. The F-Test also indicates that there is a significant association between the variables at the stronger 1% level. These results were then further regressed using only the two variables identified as significant. The results are displayed in Table 9.5.

Table 9.5

Summer 1984 With Markdowns Being Regressed Against Opening Stock and Intakes

	Coefficient	Std Error	T-Statistic
Intercept	-279.5642	114.7179	-2.4370
Os/Cos	0.0568	0.0276	2.0557*
Intake	3.4636	1.0510	3.2956**

Corrected R-Squared: 0.115939
F-Test   : 6.7047

* Significant at 5%
** Significant at 1%

The degree of association between both variables became more evident in the analysis undertaken since both were significant at the 5% level, and with intakes at 1%. If this output is compared to Table 9.3 (Winter 1983), the results are similar except that, in the Summer season, increases in the levels of closing stocks held were not found to have a significant influence on the incidence of markdowns.

This outcome could be explained by the fact that in Summer 1984 the percentage of total markdowns to sales for the company decreased, whereas in Winter 1983 they increased. This pattern was constant at all stages of the trading season. With such a decrease, it is probable that buyers would have been under little pressure to minimise markdowns. This is because markdowns were budgeted for on a percentage to sales basis. Consequently, markdowns would be taken where needed. This would have resulted in merchandise being cleared since the adjusted pricing would have most likely reflected the market forces at the time. The final outcome of this would be that closing stocks would not have risen as a result of markdowns not being taken.

To conclude, both the variables of opening stock and intakes were significant in their effect on markdown levels. This outcome was identical to that for Winter 1983. This provides further evidence that markdowns are affected by **both** obsolescence (Independent Variable I) and unrealistic initial intake rates (Independent Variable IV). Thus, since it has been shown that in this case markdowns have been caused by sharp increases in intake levels, there must be an adjustment for this when the performance of buyers is being appraised.

iii) Winter 1984

The data analysed for the Winter 1984 season was derived from those 54 departments which increased intakes by over 3%. The results of this analysis is shown in Table 9.6.

Table 9.6

Winter 1984 With Markdowns Being Regressed Against Four Variables From Those Departments Increasing Intakes Over 3%.

	Coefficient	Std Error	T-Statistic
Intercept	-1069.7430	557.6193	-1.9184
Os/Cos	0.0479	0.2652	0.1806
5m/Bud	0.5600	0.5913	0.9470
Inc. L.year	-0.6906	0.6260	-1.1032
Intake	12.1108	4.9269	2.4581*

Corrected R-Squared: 0.1661964
F-Test   : 3.49154

* Significant at 2%

It can be seen that the only variable significant at the 10% level is intake increases. This variable was then regressed in

isolation against markdowns, with the result displayed in Table
9.7.

Table 9.7

Winter 1984 With Markdowns Being Regressed Against Intake Rate Increases In Departments Increasing Intakes By Over 3%

	Coefficient	Std Error	T-Statistic
Intercept	-1256.1010	460.1124	-2.7300
Intake	13.8810	4.2523	3.2643*

Corrected R-Squared: 0.1618604
F-Test   : 10.65594

* Significant at 1%

The above Table confirms that for Winter 1984, increases in the
intake rate had a significant effect on the value of markdowns
taken. This is consistent with the results for each of the
previous seasons. The only major difference between these
results and those of earlier seasons is that movements in
opening stock as a percentage of budgeted sales were not
significant. The reason for this is not clear. It is possible
that this variable is more likely to be significant in certain
product categories. This will be examined later in this
Chapter.

9.4.5 Significance of Findings

The above analysis confirms that increases in the level of
intake percentages do affect the level of markdowns taken in
that season. This was found to be the case in all three
seasons. It is therefore concluded, at this stage of the
analysis, that the Hypothesis has no support, and that sharp

increases in intake rates do have a significant effect on markdowns.

9.4.6 Extended Analysis By Product Category

Consistent with the analysis in Chapter Seven, it was decided to separate the results for the three major product categories (high fashion, non-high fashion, and non-clothing departments) and test whether for each separate category, increases in intake percentage do result in increased markdowns. For this testing, a further Hypothesis was established.

Hypothesis Twelve: Sharp increases in initial markups between trading periods do not cause subsequent increases in markdown levels for all three major product categories.

To test this Hypothesis, those departments included in the data base to test Hypothesis Eleven were allocated to one of the above product categories. The methodology used was identical to that outlined in Section 9.4.3. The results for each product category are shown in the following Tables. There is one Table for each product category and in that Table the results for all three seasons are included.

i) High Fashion Departments

While the high fashion group comprised nineteen departments, only in Summer 1984 did more than one department sharply

increase intakes. The analysis for this season is shown in Table 9.8.

<div align="center">

Table 9.8
High Fashion Departments Increasing Intakes
By More Than 3% in Summer 1984

</div>

	Co-Efficients
Intercept	815.747
Os/Cos	.024247
5m/Bud	.533364*
Inc. L.year	-.503198
Intake	-6.93881

Degrees of Freedom: 10
* Significant at 10%

As can be seen, increases in intake percentages were not significant in the determination of markdown levels. This outcome is not altogether surprising since the merchandise traded in high fashion departments is arguably traded on emotive issues rather than price. Hence, it could be suggested that an increase in markup between seasons is likely to be overlooked by a potential customer if the merchandise "has the right look".

ii)   Non High Fashion Clothing Departments

For this category, once the data had been appraised, it was evident that only two of the three seasons could be analysed. This was because in the Winter 1983 season only three non-high fashion clothing departments increased intakes by more than the required percentage. This number contrasted with 42 in Summer 1984 and 21 in Winter 1984. The results from analysing the data are shown in Table 9.9.

Table 9.9

Non-High Fashion Clothing Departments Increasing Intakes By More Than 3%.

	Co-efficients	
	Summer 1984	Winter 1984
Intercept	92.77692	27.25971
Os/Cos	0.08069*	1.85011**
F-Test	4.44180	13.11740

* Significant at 5%
** Significant at 1%

As can be seen from the above Table, in both seasons the variable "opening stock as a percentage of budgeted sales" was significant in the determination of markdown levels. Of note is the finding that in neither season were intake increases identified as being a significant contributor to the incidence of markdowns. Indeed, the level of significance for this variable was in the range of 20%-50% for a two-tailed test.

iii) Non-Clothing Departments

For this category data was drawn from all three trading seasons with 15 departments were drawn from Winter 1983, 34 from Summer 1984, and 28 from Winter 1984. The results are shown in Table 9.10.

Table 9.10

Non-Clothing Departments Increasing Intakes By More Than 3%

	Winter 1983	Summer 1984	Winter 1984
Intercept	327.0452	-324.1193	-1104.104
Os/Cos	.189717**	n/s	n/s
5m/Bud	n/s	n/s	n/s
Inc. L.year	n/s	n/s	-1.90187**
Intake	-1.95253*	3.90279**	13.7726***
F-Test	6.18450	7.78963	21.26586

*   Significant at 10%
** Significant at 1%
*** Significant at .1%

As can be seen from the above Table, intakes were found to be significant, at the 10% level or less, in all three seasons. This outcome contrasts with the results from the other two major product groupings where in neither instance were increases in intakes found to have a significant effect on markdowns. It could be suggested that this result is to be expected since it can be reasoned that consumers buy clothing for reasons other than perceived fluctuations in price. In contrast, merchandise offered in non-clothing departments is likely to be more standardised in terms of that offered in other department stores. For example, if a consumer is about to purchase a kettle or video recorder, it is most likely that the prospective purchaser will be able to compare prices more rationally than if clothing is to be purchased.

Also, it is interesting to note that in Winter 1984, increases in closing stock over the previous period were also found to have a significant effect. It was in this season that

markdowns were significantly higher than in either of the previous seasons. Thus, it seems that buyers opted to increase closing stock levels rather than further increase markdowns. This was also discussed earlier.

In conclusion, **Hypothesis Twelve is accepted** since only markdowns originating from departments in the non-clothing category were found to be linked to sharp increases in intake rates. This conclusion is important since it means that only those departments included in this category are likely to have their results distorted by intakes being sharply increased. Further, it means that any adjustments to the basic RIM model for the purposes of performance measurement can be selective in terms of departments targeted.

9.4.7 Effect of Increases in Intake Percentages on Gross Profit

It was decided to estimate the value of the markdowns taken caused by the sharp increases in intake levels. It is argued, as it has been earlier, that such markdowns should be included in the calculation of the cost multiplier and not excluded as they would be if the AAS2 methodology is applied.

Hypothesis Thirteen: In any one season, markdowns taken which were caused by sharp increases in intake rates, did not have a material effect on gross profit.

To test this Hypothesis, analysis was restricted to data originating from non clothing departments. As shown in earlier Sections, it was the markdowns from these departments that were found to be influenced significantly by sharp increases in intake rates. This significance was not found however when data from high fashion and non-high fashion clothing departments was tested.

While this significant relationship was found in all seasons, it was the Winter 1984 results that generated the highest R-Squared (.6298) outcome. It was therefore decided to analyse data from that season alone.

The regression equation used, is the same as displayed in Table 9.10, and is as follows:
Markdowns = -1104.104 - (1.90187 * % increase in Winter 1984 closing stock as compared to that for Summer 1984) + (13.7726 * % increase in Winter 1984 intakes as compared to those for Summer 1984).

The application of this equation generated markdown predictions for each of the 28 departments analysed. These predictions were used rather than actual markdowns since such an adoption neutralises any effect on markdowns specific to a single department (such as the positioning of a department in relation to traffic flows, superior merchandising skills, etc).

To enable the predictions to be made, dummy values were substituted. First, in place of the **actual** intake percentage,

a value of 103% was inserted. This figure was used in earlier

testing as the threshold for "sharp" intake increases. By

using this value, estimates were able to be generated of the

markdowns caused when intakes increased beyond this level.

Second, the value used for closing stock movements was 100% or

the actual figure, if this was lower. The use of 100% enables

the effect on future markdowns to be predicted if closing

stocks have been increased in order to delay the taking of

markdowns. In summary, the combined use of both dummy values

should isolate the total effect on markdowns if intake

increases are allowed to occur. As a basis for calculation,

the actual markdowns for Summer 1984 were used. These figures

were used since that season was the basis on which Winter 1984

markdown increases were to be calculated. The results of the

analysis are shown in Table 9.11. In this Table, the

department is identified together with the estimated markdowns

that have arisen because intakes have increased.

Table 9.11

Estimated Effect On Markdowns From Increasing Intakes

Dept	$	Dept	$	Dept	$
5741	64	5767	291	5911	13619
5254	8891	9313	39609	9363	43968
9347	16470	9355	50114	5157	6039
5165	2870	9321	148910	4232	16049
6674	49472	4313	61564	3707	17467
9258	12230	9240	6063	7052	8834
7010	10244	7468	18955	7905	9243
8537	16858	9038	19672	4509	18497
7222	3004	7230	5696	7248	54059
7280	13151				

The estimated total effect on markdowns, as per Table 9.11, was

$671,903. This figure is significant when compared with the

total markdowns of $1,459,484 taken by these departments in

Winter 1984. It suggests that 46% of the markdowns taken were associated with pricing policies and only 54% with "normal" factors such as obsolescence.

The total impact on the gross profit for Winter 1984 is, however, less than $671,903. This is because a large proportion of the merchandise purchased during the season is sold in the same season. Thus, the impact on gross profit is limited to that part of the $671,903 attaching to closing stock and so flowing into the following period. Obviously, the proportion of closing stock to purchases differs from department to department and so the amount attaching to each responsibility centre has to be separately calculated. In addition, the markdowns then have to be reduced to cost approximations by using an adjusted cost multiplier for each department. Table 9.12 shows the output from these calculations.

Table 9.12

Effect On Gross Profit From Increasing Intakes

Dept	Effect on Profit	Prev.Reported Profit	%
5741	$49	$17706	.28
5767	182	8497	2.14
5911	6878	97130	7.08
5254	2898	36672	7.90
9313	12944	188946	6.85
9363	17873	31309	57.09
9347	4626	64924	7.13
9355	11875	118493	10.02
5157	3318	40074	8.28
5165	1494	45768	3.26
9321	55152	18446	298.99
4232	4964	71192	6.97
6674	15954	151113	10.56
4313	19606	172432	11.37
3707	1874	154159	1.22
9258	6505	25084	25.93
9240	3001	27860	10.77
7052	3534	158617	2.23
7010	3940	127522	3.09
7468	8177	66736	12.25
7905	3231	27344	11.82
8537	7143	169460	4.22
9038	9107	111006	8.20
4509	4128	354741	1.16
7222	548	28504	1.92
7230	1427	7966	17.91
7248	15640	76080	20.56
7280	1124	58650	1.92
Total	**$227192**	**$2456431**	**9.25%**

As can be seen, there was a calculated effect on profit of more than 10% for 11 departments (39.29%) out of the total of 28. In addition, a further 7 departments had an effect of between 5% and 9.9%. Thus, over 64% of all departments that increased intakes by more than 3% in Winter 1984, understated gross profit in that season by a minimum of 5%. One department understated profit by 298% or $55,152. In that case the department increased intakes by 15% and traded in a mix of electronic products that traditionally are price sensitive. Of

interest, the total markdowns for that department were $219,000
in Winter 1984 as compared to $21,000 two seasons earlier.

To assess whether these effects on gross profit are material,
the guidelines for materiality, as pronounced by the Australian
professional accounting bodies, was adopted. These guidelines
are included in AAS5 - Statement of Accounting Standards,
Materiality in Financial Statements. As stated in the
Statement in paragraph 12:

"(a) an amount which is equal to or greater than 10 per cent of
the appropriate base amount, ought to be presumed to be
material unless there is evidence to the contrary;

(c) no presumption ought to be made as to the materiality of
an amount which lies between 5 per cent and 10 per cent of
the appropriate base amount prior to consideration of the
nature of the item."

Although it is acknowledged that these guidelines were
promulgated for external reporting purposes, it is argued that
these statements should be the "outer limits" in defining
materiality where the results are to be used for employee
performance appraisal. Thus, it is suggested that materiality
for such internal purposes should have a threshold of 5% and
possibly lower. For the case under study, this means that the
adjustments to gross profit were material for 64% of those
departments increasing intakes by more than 3%. Indeed, in
three departments the adjustments taken would have generated a
bonus for the buyer where previously none had been paid. Of
equal concern, given the fact that the increases in intakes
caused overpricing to occur, the ability to trade would have

been seriously impaired. This would have occurred in the early months of the season and so the ability to achieve sales budgets would therefore have been affected. This factor would also have increased the markdowns taken in this season. Thus, employee performance would have been detrimentally affected in this and other seasons. **It is therefore concluded that the Hypothesis is rejected** since the increases in intake percentages did have a material effect on profitability.

9.5 Summary

The Chapter commenced with a discussion of the linkage between the OTB and the RIM, recognising that these two systems are used jointly by 85% of those companies responding to the questionnaire. The "mechanics" of the RIM were then reviewed and it was recognised that the treatment of markdowns is a critical issue in the methodology. It is this issue that differentiates between the variations of the model.

It was further acknowledged that, of those responding to the questionnaire, all companies used the RIM as defined in AAS2. However, this variation of the RIM does not recognise that markdowns can occur in some situations because merchandise is initially overpriced. This Chapter concentrated on this fact since it has important implications for performance appraisal if the output from the RIM is to be used for this purpose.

Initially, data originating in those departments which increased intakes by more than 3% was accumulated and analysed.

The results, although reasonably conclusive, suggested that further conclusions could be formed if the data relating to each major product category was analysed separately. These three groups were high fashion, non-high fashion clothing, and non-clothing.

The results achieved from this additional analysis were conclusive. First, marked increases in intakes were not found to have a significant effect on the level of markdowns for each of the clothing categories, but were significant for non-clothing departments. Second, variations in the level of opening stock as compared to budgeted sales had a significant effect on markdowns for non-high fashion departments.

For non-clothing departments, the proportion of markdowns that related to increases in intakes were calculated. These proportions were then converted to monetary amounts and compared to the declared profits for each relevant department. This was done in order to assess whether the effects on markdowns were material. This was found to be the case for 64% of the departments. This means that if employees were to be appraised on the "raw" profit figures, adjustments should have been taken if fair appraisal was to occur.

Chapter Ten

A Continuing Analysis of The Retail Inventory Method

10.1 Introduction

This Chapter continues the discussion of the RIM. While in Chapter Nine discussion concentrated on the causes of markdowns and how these impact on the RIM, this Chapter analyses the RIM from a wider perspective.

First, the structure of the RIM model is analysed with a particular emphasis on the weighted averaging that occurs within the method. Second, the fact that opening stocks as a proportion of budgeted sales can generate markdowns is further examined. This possibility became apparent in the analysis completed in Chapter Nine. Third, the impact on the OTB system of all the conclusions reached, in both this Chapter and Chapter Nine, is analysed.

This Chapter concludes the analysis of the RIM. With this part of the analysis complete, conclusions can then be drawn regarding the changes that should be made to both systems as a linked unit, if equitable employee appraisal is to occur. As noted in section 4.7.3, employee performance bonuses are paid by 61.5% of large retailers who use both the OTB and the RIM in a linked manner. Fluctuations in bonuses are correlated with key variables directly influenced by both the OTB and the RIM.

10.2 Weighted Averaging Within the RIM

As was discussed in both Chapters Three and Nine, the cost multiplier within the RIM model is generated by a weighted averaging technique. Principally, this weighted average is dependent on purchases for the period together with the level of opening stock. Since these figures are included at both cost and retail, intake rates can be determined for each component in the model. A simple illustration of the RIM model is shown in Table 10.1.

Table 10.1
Illustration of a Cost Multiplier Calculation

	Cost	Retail	Cost Multiplier
Opening Stock	$110	$200	.5500
Purchases	610	1000	.6100
Total	$710	$1200	.5917

As stated in Chapter Three, the accuracy of the RIM model for the purpose of converting retail values to a cost basis is dependent on a number of factors. One of these is that the mix of products included in the calculation does not alter significantly from period to period. Another is that the average markups remain reasonably constant between periods. While there is insufficient information available in the case data to determine whether product mixes have changed significantly between periods, this is not the case for average markups or intake rates.

In Australia and indeed worldwide, those companies using the

RIM convert retail values to cost by multiplying the total retail value for a responsibility centre by the averaged cost multiplier (Lewison and De Lozier, 1986). No account is taken of either any significant changes to intake rates between seasons or the age profile of the merchandise included in the total value despite the fact that the retail literature indicates that most companies age their merchandise by trading season. The company under study was no exception to this practice and showed the aging of merchandise on summary stock sheets.

This detailed ageing of merchandise for each department enables the accuracy of the RIM calculation to be verified. This outcome can be achieved because specific merchandise quantities can be matched with the intake rates attaching to the season in which the merchandise was purchased. This is important if intake rates have increased significantly. In the case under study, intake rates moved sharply in both the Summer 1984 and the Winter 1984 seasons. In these seasons, 18 and 13 departments respectively, increased intake rates by over 10%. To a lesser extent, similar levels of increase also occurred in Winter 1983 (6 departments). In order to test whether the RIM generates reasonable estimates for the purpose of performance appraisal if intake rates are increased by more than 10% between seasons, Hypothesis Fourteen was established.

Hypothesis Fourteen: <u>The use of the cost multiplier in the RIM model does not generate reasonable estimates of cost values in the valuation of inventory if the averaged cost multiplier has increased by more than 10% over the previous trading period.</u>

While the selection of a cutoff point of 10% was arbitrary, it was assessed that such a variation between seasons could have a significant impact on any conversions to cost. This figure was chosen instead of the 3% previously used since it was reasoned that 3% was not large enough to generate material differences. (A small sample of variations in the 3% to 6% range was bench tested and the results generated confirmed this judgement.)

To maintain consistency with Chapter Nine, the departmental results selected for analysis were derived from the Winter 1984 trading season. As stated earlier in this Chapter, the total number of departments analysed was 13 (10% of the total population of that season). The range of intake increases, from the close of one season to the next, ranged from 10.51% to 22.68%. In addition, the aging profile of merchandise differed considerably between departments. In one department only 50.4% of the merchandise included in closing stock was purchased in the current season. The balance was more than one season old. This scenario contrasts with another department where 97.47% of the closing stock was purchased in the current season.

The methodology used for testing this hypothesis was as follows:

(i)   The cost values for both opening stock and total purchases for Winter 1984 were isolated for each department under study. These figures were derived from company records. Both these figures were then summed.

(ii)   The weighted average intake figure as at the close of the previous trading period, was applied to the cost value of opening stock so as to generate an equivalent retail value. The weighted average intake figure was taken from internal company records.

(iii)   The sum of the cost values for both opening stock and total purchases was then converted to a retail value using the average intake figure as at the end of the Winter 1984 season.

(iv)   The retail value for the total purchases in the Winter 1984 season was derived by deducting the result in step (ii) above, from that in step (iii). This result was then divided into the comparative cost value and the intake figure established for the total purchases made in Winter 1984.

(v)   The closing stock, at cost value for Winter 1984, was then taken and converted to an equivalent retail value. The basis for the conversion was the original average intake figure for the season, as in step (iii) above. The figure derived was the equivalent gross retail value of the closing stock.

(vi)   Using summary information derived from stocktake sheets, the retail values (as in step (v)) were aged. In other

words, the retail values were divided between the previous seasons so that appropriate intake rates could be assigned to each value.

(vii) The aged retail values were then reduced to a cost basis using the comparative intake rates that attached to total purchases in each of the seasons. The use of the intake rate attaching to total purchases deleted all averaging from the calculation process.

(viii) The result derived in step (vii) was then deducted from that in step (v) so as to give the difference at cost if a weighted average is not used. An illustration of the calculation just described is outlined in Table 10.2.

Table 10.2

Recalculation of RIM Cost Values If The Effect of Weighted Averaging is Deleted From The Calculation

Department 7222

	Cost	Retail	Cost Multiplier
Opening Stock	$137573	$168100	18.16
Purchases	149798	194651	23.04
Total	$287371	$362751	20.76
Closing Stock	$36688	$46300	20.76

Recalculation:

	Cost	Retail	Cost Multiplier
C/Stock-Season A	$31548	$40994	23.04
-Season B	4342	5306	18.16
Total	$35890	$46300	22.49

Difference $ 798 : a reduction to profit for this
($36688-$35890)   season.

The differences for all 13 departments analysed in Winter 1984, are shown in Table 10.3.

Table 10.3

Effect of Deleting Weighted Averaging
From The RIM Calculation

Dept	C/S at Cost	% C/S Current	Reduction To Profit	% of Profit Already Declared
1195	$36618	78.10%	$159	.21%
6022	71241	93.03	891	1.11
2824	136136	50.05	1350	3.33
6755	47926	97.31	67	.07
9258	135594	78.74	4176	16.65
6674	143459	95.01	10978	7.26
9363	118941	92.24	5492	17.54
9355	138526	89.95	1905	1.61
4313	329144	81.99	5483	3.18
9321	634984	97.47	41485	224.90
7222	36688	88.54	798	2.80
7248	255236	65.89	8071	10.61
7280	27398	52.05	(789)	1.35

As can be seen in the above Table, in four departments the reduction to profit was greater than 10% of the profit already declared. In a further two departments, the reduction was between 5% and 10%. Thus, in total, six departments out of the thirteen analysed (46%) had a reduction in profit of over 5%. If the guidelines for materiality as outlined in Chapter 9 are applied, then it must be concluded that profit can be materially affected by the weighted averaging used within the RIM model. Further, the results show that under these conditions, the RIM model does not provide a reasonable cost estimate of the value of inventory. **Hypothesis Fourteen is therefore accepted.**

While this conclusion affects performance appraisal outcomes in the season under study, it does not generate the final valuation of closing stock for those departments analysed. This is because the initial valuation was affected by both the

level of markdowns generated by sharp increases in intake rates and the weighted average effect. The impact on closing stock valuations by markdowns caused by increases in intake rates was discussed in Chapter Nine. Final valuations suitable for performance appraisal cannot be determined until these two elements are drawn together in the one calculation.

The departments included in this calculation are identical to those listed in Table 10.3. All but four of these departments are also included in Table 9.14 where the impact on markdowns from the increase in intake rates was displayed. Thirteen departments were, therefore, analysed further.

The methodology used in the calculation was similar to that outlined earlier in this section when Hypothesis Fourteen was tested. There was, however, one variation made to the process which altered step (iv). Namely, before the purchases at retail value were divided into the comparative cost value, the effect on markdowns caused by the sharp increases in intake rates was deducted from the appropriate retail values. The level of this deduction for each department, was shown in Table 9.14. Once this deduction was made, a new cost multiplier was calculated. This new cost multiplier was used in the calculation described in step (vii) of the methodology. The output from these calculations is a valuation of closing stock that includes adjustments for the two factors described in the two earlier paragraphs. As stated previously, these factors are beyond the influence of the buyer and hence should be deleted from any performance appraisal process. The adjustment

to closing stock for each department and the effect on profit
is shown in Table 10.4.

Table 10.4

Impact on Closing Stock Valuations From the Markdown Effect And The Deletion of Weighted Averages From The RIM Calculation

Dept	Original C/S at Cost	Amended C/S at Cost	Increased Profit	% of Profit Already Declared
1195	$36618	$36459	($159)	.21%
6022	71241	70350	(891)	1.11
2824	136136	134786	(1350)	3.33
6755	47926	47859	(67)	.07
9258	135594	139212	3618	14.42
6674	143459	149668	6209	4.11
9363	118941	141759	22818	72.88
9355	138526	147719	9193	7.76
4313	329144	349026	19882	11.53
9321	634984	678352	43368	235.11
7222	36688	36384	(304)	1.07
7248	255236	264505	9269	12.18
7280	27398	29002	1604	2.73

As can be seen, five departments out of the thirteen analysed
had their profit increased by more than 10%. In addition, one
other department received a profit adjustment of more than 5%
which can be considered a material amount.

If these results are combined with those of Table 9.15 the
total effect emerges. This analysis generates a total
population of 32 departments in which the value of closing
stock was adjusted for one or more reasons. Of these, nine
departments (28.13%) were adjusted by more than 10%, and a
further eight (25%) by between 5% and 9.9%. **Thus, over 53% of
all departments in the population understated profit by more
than 5%.**

10.3 Opening Stock

Although the discussion in much of Chapters Nine and Ten has concentrated on the valuation of closing stocks, it was apparent in Chapter 9 that opening stock levels also impacted on markdowns. Specifically, this impact fluctuated with the changes in the ratio of opening stock to budgeted sales from season to season.

These changes, however, were not shown to be statistically significant for all merchandise categories. For all departments increasing intakes by more than 3%, only non-high fashion departments were found to have markdowns significantly affected by variations in opening stocks. When this analysis was extended to those departments increasing intakes by less than 3%, departments in both the categories of non-high fashion and non clothing were also found to be significantly affected.

This fact is important for this study since such variations in opening stock levels have their foundations in a previous trading season. Opening stock is the closing stock in the previous season. The level of the closing stock is determined by actions of the departmental buyer in that earlier season and, as such, any negative flow-on effects should not be used in judgement against future performance.

As stated earlier, the company entered into a performance contract with a buyer from trading season to trading season. If a buyer's performance met a minimum level, a bonus was paid

in recognition of an attained contract. Since this bonus was intended to reflect recognition of a satisfied contract, any identifiable factors corrupting the accurate measurement of outcomes resulting from actions taken in the season under review, should have been eliminated. It is for this reason that the level of markdowns generated by variations in opening stock have to be identified. Once identified, an appropriate adjustment to the value of opening stock needs to be made. The level of this adjustment would reflect the value attaching to actions taken in a previous season, a value that should not be included in any calculations relating to current performance appraisal.

Hypothesis Fifteen: Markdowns taken because of variations in opening stock as a percentage of budgeted sales between seasons do not materially affect departmental gross profit levels.

As in earlier sections, data from the Winter 1984 trading season was selected for further analysis. While other seasons could have been selected, consistency in the selection of trading season enables previously reported gross profit levels to be refined still further. In this section the refinement results from a reassessment of opening stock. The co-efficients relating to each of the merchandise categories to be analysed is shown in Table 10.5.

Table 10.5

A Review of Co-efficients Relating To Opening Stock Levels In Winter 1984

	Co-efficient
Intakes Increased 3%> Non-High Fashion	1.767443 *
Intakes Increased <3% Non-High Fashion Non Clothing	.184618 ** .326435 *

*   Significant at 1%
** Significant at .1%

The co-efficients, as outlined in Table 10.5, were used as a basis for predicting the level of markdowns that were caused by the increase in opening stock at retail as compared to budgeted sales, from season to season. For example, the regression equation used for the non-high fashion group was:

Markdowns = 45.515 + (1.767443 * % increase in Winter 1984 opening stock over budgeted sales as compared to Summer 1984).

As in Section 9.4.7, the predictions generated by this equation were used instead of the actual markdowns taken, since such a process neutralises any influences on markdowns that may be specific to any one department (e.g. superior merchandising skills, etc.). The effect on markdowns caused by increases in opening stock are summarised in Tables 10.6 to 10.8.

Table 10.6
Effect on Markdowns in Non-High Fashion Departments
Increasing Intakes In Excess Of 3%

Dept	Increase In O/S	Effect @ Cost	Original Profit	%
1195	3.26%	743	75714	.98
6064	35.16	15458	70775	21.84
6030	32.07	4100	173274	2.37
6022	72.70	6037	80175	7.53
2816	25.32	474	68253	.69
2824	65.17	1376	40540	3.39
2719	9.92	1275	141913	.89
6886	16.17	5506	70728	7.78
6755	147.12	4256	95714	4.45
6713	25.25	1837	176119	1.04
6844	270.57	22203	78754	28.19
6373	11.05	945	95021	.99
6501	11.92	4727	90905	5.20

Summary of Effect on Profit:		No	%
Departmental profit affected	-less than 5%:	8	61.5
	-between 5% and 9.9%:	3	23.1
	-over 10%	2	15.4
		13	100.0

Table 10.7
Effect on Markdowns in Non-High Fashion Departments
Increasing Intakes By Less Than 3%

Dept	Increase In O/S	Effect @ Cost	Original Profit	%
0686	1.19%	6	91249	.01
2662	10.84	148	19985	.74
2696	3.18	53	101814	.05
6365	53.71	590	17747	3.32
6886	14.17	500	70728	.71
6462	40.70	1292	74031	1.75
6488	30.51	1043	244993	.42
6828	29.70	514	170866	.30
6878	65.98	4983	217187	2.29
6852	59.71	460	130526	.35
6315	74.98	182	20318	.90
7117	256.85	8417	93576	8.99

Summary of Effect on Profit:		No	%
Departmental profit affected	-less than 5%:	11	91.7
	-between 5% and 9.9%:	1	8.3
	-over 10%	0	0.0
		12	100.0

Table 10.8
Effect on Markdowns in Non Clothing Departments
Increasing Intakes By Less Than 3%

Dept	Increase In O/S	Effect @ Cost	Original Profit	%
5555	194.15%	2770	28846	9.60
5709	54.41	1140	52800	2.16
5717	25.13	5648	100262	5.63
5725	132.16	2152	11255	19.12
5775	216.47	9424	66158	14.24
5610	89.20	6345	47840	13.26
5929	27.81	465	43061	1.08
5319	473.66	8420	45013	18.71
2743	2.63	40	112565	.04
9224	155.73	9254	35999	25.71
9274	142.62	9101	21931	41.50
9410	157.39	3015	16094	18.73
4127	255.07	36066	122805	29.37
5115	35.35	2525	163619	1.54
8511	9.08	773	185324	.42
8561	50.36	5580	109253	5.11
4216	9.34	716	101684	.70
9046	16.25	893	53732	1.66
9062	129.86	4021	73824	5.45
7028	93.57	5124	67620	7.58
7044	81.27	11736	308487	3.80
7426	73.20	12017	92010	13.06
4606	16.78	385	188670	.20
7272	31.92	4301	(61267)	7.02
7256	504.22	53800	(11277)	20.96

Summary of Effect on Profit:
Departmental profit affected

	No	%
-less than 5%:	9	36.0
-between 5% and 9.9%:	6	24.0
-over 10%	10	40.0
	25	100.0

As can be seen from Tables 10.6 - 10.8, the effect on profit for a number of departments was material. The percentage of departments meeting the cutoff point for materiality differed between categories. For those non-high fashion departments increasing intakes by more than 3%, the effect on profit was material for five departments (38.5%) out of the 13 analysed. In the case of two departments, the effect was greater than 10%. For those departments in this category increasing intakes by less than 3% the result was not so convincing since the

effect on profit was material for only one department (8.3%).

The strongest result was derived when the effect on non-
clothing departments was calculated. In this category, the
effect was material for 16 departments (64%), and for 10
departments the effect was greater than 10%.

In conclusion, 50 departments were analysed across the three
categories and the effect on profit was calculated to be
material for 22 departments or 44% of the total. **Hypothesis
Fifteen is therefore rejected.**

10.4 The Results From The Effect of Increased Intakes and Opening Stock Being Merged

Having determined the effect on markdowns from increases in
relative opening stocks, it was decided to calculate the **total**
impact on profits already declared for Winter 1984. Such an
impact arises from a combination of effects. First, there is
the effect on markdowns that occurs because of increased intake
rates (Table 9.15). Second, the effect on profits arising from
the deletion of weighted averages in the RIM calculation (Table
10.4). Third and finally, there is the effect from relative
increases in opening stock levels (Tables 10.6, 10.7, and
10.8). The total impact on departmental profits is shown in
Table 10.9. It should be noted that for ease of illustration,
only those departmental results that increased by more than 5%
are included.

Table 10.9

Total Increases in Departmental Profits Arising From a Redistribution of Markdowns

Dept	Increase In Profit	Declared Profit	%
5911	$6878	$97130	7.08
5254	2878	36672	7.90
9313	12944	188946	6.85
6022	5146	80175	6.42
9363	22818	31309	72.88
9347	4626	64924	7.13
9355	9193	118493	7.76
5157	3318	40074	8.28
9321	43368	18446	235.11
4232	4964	71192	6.97
4313	19882	172432	11.53
9258	3618	25084	14.42
9240	3001	27860	10.77
7468	8177	66736	12.25
7905	3231	27344	11.82
9038	9107	111006	8.20
7230	1427	7966	17.91
7248	9269	76080	12.18
6064	15458	70775	21.84
6886	5506	70728	7.78
6844	22203	78754	28.19
6501	4727	90905	5.20
7117	8417	93576	8.99
5555	2770	28846	9.60
5717	5648	100262	5.63
5725	2152	11255	19.12
5775	9424	66158	14.24
5610	6345	47840	13.26
5319	8420	45013	18.71
9224	9254	35999	25.71
9274	9101	21931	41.50
9410	3015	16094	18.73
4127	36066	122805	29.37
8561	5580	109253	5.11
9062	4021	73824	5.45
7028	5124	67620	7.58
7426	12017	92010	13.06
7272	4301	(61267)	7.02
7256	53800	(11277)	20.96

As can be seen in Table 10.9, material increases in gross profit were calculated for 39 departments. This number represents 29% of the total number of company departments in

that season. In addition, six of these departments qualified for a profit performance bonus when previously none had been paid. Further, an extended analysis showed that, for those departmental adjustments to profit not deemed material, another two departments converted a negative variance on the profit dollar budget to a positive variance. Thus, in total, eight additional departments qualified for a profit performance payment when none previously had been paid. While eight departments may seem an insignificant number, this is not so when evaluated against the fact that initially only 33 bonuses had been paid in Winter 1984.

It is therefore concluded that the total impact on gross profit results can be significant if markdowns are allocated to the trading season in which decisions were taken that caused the markdown, and if the company uses the standard RIM methodology. In some cases this allocation will have no effect on the gross profit of the current season (e.g. when intakes are increased and the merchandise is sold before the end the same season), but in other situations initial gross profits will be subject to material change. These initial gross profits are those derived for external reporting purposes (e.g. reporting to shareholders).

10.5 Impact of Conclusions Relating to RIM on the OTB System

As can be recalled from Chapter Three, the OTB system is used to control the purchasing of new inventory for resale so that predetermined merchandise budgets are attained. In brief, the

OTB system is used to achieve a balanced relationship between investment in inventory and the fulfilment of customer "wants". The system achieves this by calculating, at any time in the season, the amount of money that is available for spending on future purchases in that season.

This spending availability (open-to-buy balance) is expressed in either cost or retail value. In the case under study, it was calculated on a cost basis. To achieve this, all inputs to the system are at retail values. The initial output, i.e. the open-to-buy balance, is also at retail. This balance is then converted to a cost basis using the reciprocal of the budgeted markup percentage for each respective department.

As stated in Chapter 4, this situation can cause inaccuracies to develop in the system since part of the integrity of the cost based system depends on the budgeted markup figures being realistic. In addition, the actual markups used as purchase orders are processed through the OTB system must be realistic. As indicated above, all movements through the system are initially at retail values and if retail prices are unrealistic, in terms of what the market will pay, future OTB balances will be restrained. Likewise for the OTB balance prior to conversion to a cost basis. If the budgeted markup rates are unrealistically high, future spending may be restricted unnecessarily.

As discussed in Chapter Nine, in both the Summer and Winter 1984 trading seasons, budgeted and actual intake rates

increased significantly for a number of departments. The
extent of the increases in actual rates was shown in Table 9.4.
The impact of these increases was evident when the multivariate
regression was undertaken in Chapter Nine. This regression
estimated the impact on markdowns caused by such increases.
The impact for many departments was significant and provided
evidence that, in the seasons considered, intake rates were
increased to unrealistic levels in terms of market forces.

The effect on markdowns was illustrated on a department basis,
in Table 9.14, in respect of Winter 1984. This effect
highlights the estimated dollar value of markdowns, on a cost
basis, resulting from intake rates being unrealistically
increased. If it can be assumed that these dollar figures are
a surrogate for the "cost" of adopting an unrealistic markdown
policy, then it can be argued that the total markup dollars,
for each department under question, should be reduced by that
amount. The resultant figure should then represent a fair
total dollar markup for the basket of goods purchased in that
season.

In order for the effect on OTB balances to be calculated, this
surrogate needs to be moderated by the stockturn rate for the
department. This calculation is justified because, if the
additional intake had not been attempted, these dollars would
never have been committed to specific purchases in the original
basket. Instead, they would have been freed up for purchases
of new merchandise and, in addition, the investment recycled at
approximately the same stockturn rate as attained for other

merchandise in the department. The use of the actual stockturn rate for the season is justified on the grounds that it would be conservative. As already outlined, there was apparent consumer resistance to the intake rates applied and this resistance would have slowed the stockturn rate. This argument is supported by the fact that markdowns had to be taken as a result of the intake rate policy to clear the merchandise.

The effect on the purchasing power of the OTB system of an unrealistic intake policy is outlined in Table 10.10. The data used in this instance was that used in Table 9.14. As stated above, this data was derived from the Winter 1984 season and related to those departments suffering markdowns as a result of sharply increased intakes. In addition, the estimated foregone sales and profits were calculated for these departments using the actual stockturn rates achieved.

Table 10.10

Effect on OTB Balances From Increases in Intake Rates in Winter 1984

Dept	Effect on Purch. Power (at Cost)	Stockturn Rate	Est. Foregone Profit	/	Sales
5741	$64	.65	$43		$85
5767	291	.80	233		466
5911	13691	1.00	9495		23114
5254	14226	1.60	11706		25932
9313	60602	1.53	32474		93076
9363	54081	1.23	22826*		76907**
9347	29317	1.78	16100*		45417
9355	105741	2.11	75570*		181311**
5157	6039	.91	3556		9051
5165	2870	.96	1235		3990
9321	201029	1.35	71886		272915
4232	25839	1.61	11662		37501**
6674	90039	1.82	67289*		157328
4313	96655	1.57	41148		137803
3707	81396	4.66	39424*		120820**
9258	12230	.94	4198		15694
9240	6124	1.01	3300		9424
7052	11043	1.25	6668		17711
7010	13317	1.30	10039		23356**
7468	27864	1.47	24374		52238**
7905	13217	1.43	10585		23802**
8537	19892	1.18	14788		34680
9038	21246	1.08	14449*		35695**
4509	41433	2.24	28157		69590
7222	8231	2.74	2156		10387
7230	11449	2.01	4715		16164
7248	109740	2.03	47031		156771**
7280	57733	4.39	36235*		93968**

*   1st time bonus for the attainment of the profit budget
** 1st time bonus for the attainment of the sales budget

As can be seen from Table 10.10, if sales and profit results were generated as estimated in that Table, 10 additional departments would have been eligible for performance bonuses. Further, two additional bonuses for the attainment of profit budgets would have been paid. Thus, in total, 12 more "major" bonuses would have been generated and so, for this season, the number of departments qualifying for a performance bonus would have increased to 51.

As stated previously, only 33 performance bonuses were actually paid. Therefore, the adjustments to profit and sales arising from the discussion in this and earlier Chapters have increased this figure by 54%. While it must be recognised that the adjustments arising from the calculations in Table 10.10 are estimates only, it is clear that if actual intakes were held to realistic levels, increased levels of profit would have been generated because of the additional purchasing power made available.

10.6 Summary

This Chapter continued the concentration on the RIM that was commenced in Chapter Nine. In this Chapter, discussion focused first, on the effect of weighted averaging within the RIM model, second, the extent to which markdowns are generated because of increases in opening stock levels, and third, the impact on OTB balances from the conclusions reached in Chapters Nine and Ten.

The discussion of weighted averaging within the RIM was confined to the effect on inventory values at cost generated by the RIM if intakes increase by more than 10% in any one season. Analysis was again restricted to data from the Winter 1984 season. It was concluded that such a scenario does generate material differences to gross profit, caused by reductions in the cost values of inventory. These outcomes were then coupled with those arising from the analysis presented in Table 9.14.

That Table examined the effect on markdowns caused by sharp
increases in intake rates. After this extended analysis was
completed, it was concluded that 53% of all departments in the
population understated profit by more than 5%, a material
percentage.

The impact on markdowns caused by variations in opening stock
as a percentage of budgeted sales between seasons, was assessed
in relation to three merchandise groupings. In total, the
results for 50 departments were included in the analysis. It
was concluded that the effect on profit was material for 22
(44%) of those departments.

Arising from this analysis a "total impact" scenario was
developed. This involved the amalgamation of all the effects
on gross profit calculated in both Chapters 9 and 10. These
effects arose from three identified causes. It was established
that the increases in gross profit for 39 departments (29% of
the total population) were material. In addition, eight more
departmental manager's became eligible for a performance bonus
as a direct result of the reassessment. This number compares
with the 33 bonuses previously awarded.

Finally, the effect on the OTB system of the above findings was
evaluated. Such an evaluation was intended to highlight
additional purchasing power that would be made available if
adjustments were made in recognition of the foregoing outcomes.
In addition, findings reached relating to purchasing power were
extended so as to estimate possible effects on sales and

profitability. While conclusions in this part of the Chapter were based on extrapolations of historical results, the outcomes were material in that it is possible some 12 extra departments would have been eligible for a performance bonus. This final section provided strong evidence of the interlocking effect between both the OTB system and the RIM.

Chapter Eleven

Conclusions and Recommendations

11.1   Introduction

This Chapter draws together the conclusions reached in the earlier Chapters and then makes recommendations on actions that should be taken as a result.

This research has concentrated on the retail industry and in particular, the critical resource areas of staff and inventory. Specifically, the methodology relating to the OTB system and the RIM were analysed so that the impact of these systems on staff performance appraisal could be ascertained.

11.2   Summary and Conclusions

Chapter Two provided an overview of budgetary control systems. The budgetary process was examined together with a discussion of performance measurement and appraisal. This was extended in Chapter Three and applied to the retail environment. In particular, both the OTB and the RIM were extensively analysed and theoretical arguments presented that questioned whether they generate accurate employee appraisal.

The results from the survey of Australian department stores were reported in Chapter Four. This survey concentrated on the usage of both the OTB and RIM and performance reward systems. It was concluded, first, that both the OTB and RIM are heavily

used by Australian department store operators and, second, that
bonus rewards are normally paid to staff when performance
objectives are met.

The case study was introduced in Chapter Five. A case study
approach was used as the data required for this type of study
is normally considered strictly confidential to the company
generating it. As a result, it is not freely available for
public analysis. Three department stores were approached for
their assistance and of these, one store offered the required
data. The Chapter concluded with an outline of the Hypotheses
to be tested in the research.

Sales performance and its interaction with the OTB was analysed
in Chapter Six. The objective was to test whether sales
maximisation is impeded by the OTB system. Three outcomes were
established. First, the level of actual opening stocks as
compared to budget has little effect on the attainment of sales
objectives. Second, the level of purchases of new inventory
does impact on sales performance. This is regardless of the
volume of opening stock. Third, departments attaining sales
objectives more frequently exceeded closing stock budgets than
their less successful counterparts.

In Chapter Seven the question of whether the OTB system impedes
gross profit performance was analysed. A number of conclusions
were reached. First, it was found that the level of opening
stock is not an indicator of future profitability. Second, if
a department exceeds its purchase budget in the opening months

of a trading season it is more likely to be successful than those departments not doing so. Third, those departments attaining profitability objectives are more likely to have actual closing stocks in excess of budget. Fourth and finally, evidence was provided that there is justification for a company using more than one variation of the OTB, if these can be developed, in any one season.

Chapter Eight reviewed the performance bonuses paid to those employees meeting required performance levels. It was found that few staff were paid the basic bonus in each of the four seasons. In most cases, it was failure to attain the inventory budget that caused a shortfall in the bonus paid. In the remainder of the Chapter the discussion focused on the changes that should be made to the OTB model if accurate performance appraisal is to occur and maximisation objectives are to be achieved. These changes will be outlined, in detail, later in this Chapter.

Chapter Nine commenced with a discussion of the linkage between the OTB and the RIM. This linkage is used by the majority of Australian retailers. The methodology of the RIM was further discussed and it was recognised that the treatment of markdowns is a critical issue in this model. The impact of sharply increased intake rates on markdowns was also analysed. Three conclusions were reached. First, sharply increased intake rates do have a significant effect on markdowns for non-clothing departments. Second, markdowns for non-high fashion departments significantly increase when opening stocks as a

ratio of budgeted sales markedly increase. Third, when the level of markdowns attributed to sharply increased intake rates is derived for non-clothing departments, the effect on gross profit is significant. This means that if employees are appraised on "raw" gross profit figures, adjustments would have to be taken if fair appraisal is to occur.

Chapter Ten continued the discussion on the RIM. In this Chapter, the weighted averaging that occurs within the RIM was discussed. It was concluded that where intake rates increase by more than 10% in any one season, such a scenario can have a significant impact on gross profit. Also discussed was the effect of excessive levels of opening stocks on markdowns. It was questioned whether the value of these markdowns should be incorporated in current performance calculations. It was concluded that excessive levels of opening stock held by non-high fashion and non-clothing departments are a significant cause of markdowns. The Chapter concluded with evidence that the findings in both Chapters Nine and Ten do significantly affect the efficient operation of the OTB. It was therefore concluded that the methodologies relating to both the OTB and the RIM have to be jointly reviewed if accurate performance appraisal is to occur.

11.3 Recommendations

As a result of the above conclusions and the analysis outlined in previous Chapters, the following recommendations are made. These are separated into three sections, the first

concentrating on recommendations relating solely to the OTB, the second to the RIM, and the third to the linked scenario.

11.3.1 Recommendations Relating to the OTB

It is recommended that:

i) If a department commences a new trading season with inventories in excess of budget, the dollars available for the purchase of new merchandise should not be reduced as a result.

ii) At the commencement of each season, urgency be exercised in the procurement of new merchandise. For all departments, minimum levels of spending should be identified for each of the first three months in a season. Because of the importance of this recommendation, and its potential impact on the achievement of sales or profit objectives, shortfalls in spending should also be highlighted.

iii) If a department enters a new season with inventories in excess of budget and fully spends the original purchases budget, its markdown budget should be increased if the excess merchandise is to be cleared in that season. In addition, OTB limits should be gradually decreased in recognition of the excess inventories being sold. This should be done because the extra sales generated could be classified as abnormal rather normal, in terms of

releasing additional funds for ongoing purchases.

iv) If actual sales exceed budgeted sales, the closing stock
budget should be automatically adjusted so that historical
stockturn ratios are preserved. If this is not done, a
department could potentially attempt to service consumers
with an inadequate level of merchandise.

v) Since sales budgets are often set some months before a
season commences, a sales forecasting model should be
formally incorporated within the OTB. The forecasting
model should be one that has been found to be reliable for
short-term forecasting requirements. The suggestion of a
specific model is beyond the scope of this Thesis.

vi) If it becomes apparent that sales will not reach budgeted
levels, the closing stock budget should be reduced so that
traditional stockturn ratios are preserved. This will
have the effect of adding a further restraint on purchases
and will thus reduce the risk of unnecessary stock
obsolescence.

vii) Rather than use a fixed dollar amount for markdowns in the
OTB, such amounts should be flexible and directly related
to sales activity.

viii)If orders are placed in advance for the purchase of
inventories, these orders should be discounted to
compensate for the risk of non-delivery. These discounted

values should then be incorporated in the OTB calculations. The percentage discounts would need to be established using historical data and then periodically reviewed so that appropriate discounts are continually maintained.

ix) The above recommendations should be implemented for all types of merchandise.

11.3.2 Recommendations Relating to the RIM

It is recommended that:

i) At the end of each season those departments found to have increased intakes by more than a minimum of 3% should be identified. Statistical tests should then be conducted to ascertain whether markdowns are significantly related to the increased intake rates. If so, the estimated value of markdowns caused by these increased intake rates should be calculated. These figures should be included in the appropriate RIM calculations when retail values are being converted to a cost basis.

ii) The results of all departments should be statistically analysed at the close of each trading season in order to isolate those markdowns that relate to actions taken in a previous season. Where it is found that markdowns are statistically related to opening stock levels, the value of these markdowns should be estimated. These estimates

should then be deleted from current appraisals of employee
performance. The benefit of this recommendation is the
encouragement given to staff to maximise their current
performance without the fear of past actions impeding
current performance appraisal outcomes.

iii) Those departments whose cost multipliers increase by more
than 10% from season to season should be identified. The
closing stock for each department should then be aged and
matched with the intake rate applying to each season
identified. These intake rates should then be used to
convert the retail value, for each aged segment of the
closing stock, to a cost basis. The sum of these cost
values should then be used as the final basis for
performance appraisal.

11.3.3 A Recommendation Relating to the OTB that Originates from an Analysis of the RIM.

It is recommended that:

Since markdowns have often been found to be caused by
sharply increased intake rates, these higher intake rates
should not be incorporated in OTB calculations. This is
because they are unrealistic in terms of consumer demand.
Normally, the rate used in the OTB is the actual intake
rate applied to the merchandise ordered. However, as this
can restrain purchasing capacity (see Section 10.5) if the
rate is unreasonably high, it is recommended that the

average intake rates achieved over the last three seasons be used instead.

11.4 Expected Impact of the Recommendations on the Retail Industry

The OTB and the RIM have been used by retailers since the 1920s. Traditionally, both have been adopted because of their positive contribution to what is a complex industry. Over time, however, informal modifications to these systems have been made in recognition of the perceived shortcomings in each. As these have tended to be piecemeal, it is now argued that both methods are in need of comprehensive review. Prior to this research, there was no evidence that this has been done.

As a result of the analysis undertaken in this research, a number of recommendations have been made. These recommendations are designed to ensure that accurate performance appraisal will occur if these systems are used in a singular or linked manner. In particular, the recommendations made overcome many of the negative aspects entrenched in both these systems. Included are strategies involving the purchase of new merchandise, the quitting of obsolete stock, and the maximisation of performance outcomes.

Whilst developed in the context of a single large retailer, it is argued that these recommendations are relevant for a significant majority of Australian retailers and indeed for many retailers internationally. For retailers implementing

these recommendations, purchasing strategies will be improved leading to increased returns on investment in inventory and increased profitability. The longer term benefits accruing will be even more substantial since employee motivation will be enhanced as a result of accuracies being developed in performance appraisal methodologies.

This research has adopted a case study approach and significant conclusions have been reached. However, to support these outcomes, it would be highly desirable for further similar studies to be undertaken. It is expected that the results generated by these studies will reinforce the conclusions reached in this research and thus add further weight to the view that changes are needed to the methodologies of both the OTB and RIM.

This Chapter has outlined the conclusions and recommendations arising from the research undertaken. It has been concluded that neither the OTB nor the RIM generate accurate employee appraisal in all circumstances. Changes to both these methods are, therefore, necessary. It is expected that, when implemented, these will have a major impact on retailers and their employees on a worldwide basis.

ADMIN FEE
STK TN   2.88   PROFIT & LOSS SHEET FOR JANUARY   1985
AV. STK   143,000
GPR RATIO $1.84   1111   MODERATE DRESSES

		SALES AT SELLING		PROG SALES AT SELL		PROG % VAR		PROG G.P. AT RET.INV.		% VAR		STOCK	
		BUDGET	ACTUAL	BUDGET	ACTUAL	L.Y.	BUD	BUDGET	ACTUAL	BUD		BUDGET	ACTUAL
											OP STK	95,000	62,396
A	R	45,000	30,975	45,000	30,975	-3.9	-31.2	18,957	12,706	-33.0	PURCH	109,593	61,578
U	K	7,770	6,108	7,770	6,108	-23.8	-21.4	3,281	2,506	-23.6	CL STK	150,000	84,309
G	E	8,226	6,618	8,226	6,618	-21.4	-19.5	3,454	2,715	-21.4	PR PURCH	109,593	61,578
	M	12,500	9,216	12,500	9,216	5.8	-26.3	5,260	3,780	-28.1	AV STK	122,500	73,352
	W	16,000	10,654	16,000	10,654	-4.5	-33.4	6,727	4,370	-35.0	STK TN	2.67	3.24
	L	0	3,675	0	3,675	0.0	0.0	0	1,507	0.0	GPR	$2.00	$2.44
	T	89,496	67,246	89,496	67,246	-1.9	-24.9	37,677	27,584	-26.8			
S	R	54,000	43,025	99,000	74,000	-0.3	-25.3	41,215	28,719	-30.3	PURCH	103,120	73,144
E	K	6,014	8,486	13,784	14,594	2.5	5.9	5,755	5,664	-1.6	CL STK	190,000	103,902
P	E	9,462	9,575	17,688	16,193	-10.6	-8.5	7,357	6,285	-14.6	PR PURCH	212,713	134,722
	M	15,000	10,782	27,500	19,998	3.2	-27.3	11,442	7,761	-32.2	AV STK	145,000	83,536
	W	19,000	13,135	35,000	23,789	-2.1	-32.0	14,550	9,233	-36.5	STK TN	2.44	3.35
	L	0	184	0	3,859	0.0	0.0	0	1,498	0.0	GPR	$1.60	$2.05
	T	103,476	85,187	192,972	152,433	1.4	-21.0	80,319	59,159	-26.3			
O	R	42,000	49,465	141,000	123,465	15.4	-12.4	57,199	49,275	-13.9	PURCH	68,746	73,296
C	K	6,022	10,637	19,806	25,231	23.4	27.4	8,056	10,070	25.0	CL STK	209,000	121,750
T	E	7,029	7,426	24,717	23,619	-6.9	-4.4	9,990	9,426	-5.6	PR PURCH	281,459	208,018
	M	11,500	12,659	39,000	32,657	16.5	-16.3	15,798	13,033	-17.5	AV STK	161,000	93,089
	W	15,000	13,420	50,000	37,209	5.1	-25.6	20,233	14,850	-26.6	STK TN	2.08	3.19
	L	0	1,416	0	5,275	0.0	0.0	0	2,105	0.0	GPR	$1.38	$2.12
	T	81,551	95,023	274,523	247,456	14.4	-9.9	111,277	98,760	-11.2			
N	R	54,000	63,343	195,000	186,808	24.9	-4.2	79,566	77,843	-2.2	PURCH	43,150	86,576
O	K	13,000	13,631	32,806	38,862	33.7	18.5	13,465	16,194	20.3	CL STK	182,000	138,618
V	E	14,000	13,894	38,717	37,513	4.6	-3.1	15,838	15,632	-1.3	PR PURCH	324,609	294,594
	M	15,000	14,780	54,000	47,437	25.4	-12.2	22,056	19,767	-10.4	AV STK	165,200	102,195
	W	19,000	18,437	69,000	55,646	11.8	-19.4	28,134	23,188	-17.6	STK TN	2.16	3.21
	L	0	3,141	0	8,416	0.0	0.0	0	3,507	0.0	GPR	$1.47	$2.34
	T	115,000	127,226	389,523	374,682	24.0	-3.8	159,059	156,130	-1.8			
D	R	85,000	63,660	280,000	250,468	23.0	-10.5	115,356	101,865	-11.7	PURCH	27,800	30,868
E	K	20,500	17,543	53,306	56,405	24.1	5.8	22,112	22,940	3.7	CL STK	100,000	82,391
C	E	21,500	17,042	60,217	54,555	1.1	-9.4	24,883	22,188	-10.8	PR PURCH	352,409	325,462
	M	23,000	17,434	77,000	64,871	14.9	-15.8	31,704	26,383	-16.8	AV STK	154,333	98,894
	W	30,000	24,147	99,000	79,793	11.1	-19.4	40,724	32,452	-20.3	STK TN	2.70	3.71
	L	0	651	0	9,067	0.0	0.0	0	3,688	0.0	GPR	$1.80	$2.50
	T	180,000	140,477	569,523	515,159	19.4	-9.5	234,779	209,515	-10.8			
J	R	49,000	31,111	329,000	281,579	18.1	-14.4	128,650	112,547	-12.5	PURCH	39,050	13,889
A	K	12,000	6,598	65,306	63,003	13.9	-3.5	25,308	25,182	-0.5	CL STK	75,000	57,287
N	E	12,500	6,016	72,717	60,571	-0.6	-16.7	28,235	24,210	-14.3	PR PURCH	391,459	339,351
	M	13,500	6,451	90,500	71,322	10.8	-21.2	35,342	28,507	-19.3	AV STK	143,000	92,948
	W	18,000	8,645	117,000	88,438	1.5	-24.4	45,540	35,349	-22.4	STK TN	2.88	3.71
	L	0	-166	0	8,901	0.0	0.0	0	3,558	0.0	GPR	$1.84	$2.47
	T	105,000	58,655	674,523	573,814	13.4	-14.9	263,076	229,353	-12.8			

WOMENSWEAR

Sales to S.T.D. Bud £000	Act £000	G.P. to S.T.D. Bud £000	Act £000	Sales @ Bud. Rate £	Rate Varn. Adj. £	Dept. Result £	G.P. Rates Bud %	Act %	Stock at S.T.D. Bud £000	Act £000	S/Turn for Half Bud %	Act %	Shrinkage at Selling £	% to Sales Bud %	Act %	Markdowns at Selling £	% to Sales Bud %	Act %
470	551	197	222	+33815	-8091	+25724	41.80	40.33	65	53	3.0	3.7	41824	2.4	4.0	43881	5.3	4.2
433	408	168	155	-9852	-3839	-13691	38.90	37.96	59	62	3.4	2.8	23390	3.3	3.0	68810	5.7	8.7
1191	1011	462	399	-69638	+6663	-62975	38.80	39.46	125	74	4.3	4.0	21575	1.9	1.2	96277	4.8	5.2
706	581	292	228	-51943	-11577	-63520	41.30	39.31	74	83	3.8	2.9	15234	1.4	1.4	62500	4.8	5.8
55	61	22	26	+2095	+159	+2254	40.30	40.56	13	12	2.1	2.3	3055	1.9	2.6	5260	4.8	4.5
154	117	61	34	-14690	-12352	-27042	39.40	28.85	60	40	1.4	1.5	12344	2.9	5.9	23044	5.7	11.0
224	190	87	76	-13057	+1882	-11175	38.90	39.89	33	23	3.2	3.4	12326	2.9	3.4	24604	5.7	6.8
173	171	70	55	-884	-14617	-15501	40.40	31.86	50	24	1.9	2.7	23754	2.8	7.1	33208	5.7	10.0
452	430	189	171	-9191	-8544	-17735	41.70	39.71	57	35	3.3	3.7	8871	1.4	1.1	44470	4.9	5.6
90	78	37	29	-5050	-3082	-8132	41.30	37.33	50	49	1.1	0.9	262	1.0	0.2	13073	3.8	9.1
250	256	75	76	+1930	-684	+1246	30.10	29.83	127	344	1.0	0.9	+3334	3.8	+0.8	49196	8.6	11.4
38	18	16	9	-8523	+1273	-7250	42.20	49.20	8	4	2.2	1.3	3	1.9	-	1022	7.5	2.7
253	296	94	121	+15852	+10505	+26357	37.30	40.85	36	39	3.3	4.5	12455	3.8	2.2	22586	7.5	4.0
144	104	52	41	-14136	+3660	-10476	36.00	39.50	35	11	2.4	3.3	3243	3.8	1.6	18987	8.6	9.6
169	176	62	68	+2711	+2414	+5126	37.00	38.37	45	13	2.0	4.1	12812	2.9	3.7	23876	7.6	6.9
96	98	37	39	+669	+1697	+2366	38.10	39.84	17	12	2.5	3.7	3894	3.8	2.0	13537	7.6	7.1
469	551	170	229	+34218	+24097	+58315	37.10	41.47	62	73	3.3	3.4	19803	3.8	1.9	48479	7.6	4.6
236	276	90	113	+15227	+7227	+22454	38.10	40.72	43	16	2.7	6.6	11008	3.8	2.1	18435	7.6	3.6
335	489	124	197	+56981	+16194	+73175	37.00	40.31	101	66	2.0	3.7	18327	3.8	2.1	24011	5.7	2.7
340	301	123	112	-14063	+3936	-10127	36.00	37.31	61	34	2.9	3.4	20239	3.3	3.5	40860	7.2	7.2
289	285	113	83	-1610	-28137	-29747	39.00	29.11	55	35	2.4	3.3	28493	1.9	5.3	72024	7.6	13.5
262	251	97	93	-3894	-174	-4068	37.00	36.93	39	26	3.6	3.8	14857	3.8	3.2	39311	7.6	8.4
95	102	34	27	+2515	-9546	-7031	36.20	26.86	27	10	1.9	1.7	18525	2.9	9.0	30674	11.4	15.0
124	212	46	60	+32450	-18061	+14389	37.00	28.48	37	36	1.6	3.5	17947	2.9	4.8	46860	7.6	12.5
130	247	47	96	+41883	+7024	+48907	35.90	38.75	42	07	1.7	-5.5	15861	4.7	3.4	27381	9.9	5.8
635	643	265	259	+3484	-9539	-6055	41.70	40.22	107	105	2.7	2.5	18016	1.4	1.5	55132	3.3	4.6
63	38	28	16	-10898	-1354	-12252	44.20	40.66	21	11	1.8	1.5	+50	1.4	+0.1	4501	1.9	6.3
406	500	162	199	+37562	-132	+37430	39.90	39.87	83	49	2.3	3.4	+2761	1.9	+0.3	70732	5.7	7.6
472	496	176	195	+9067	+9355	+18422	37.40	39.29	75	49	3.2	4.4	19958	2.4	2.2	42501	7.2	4.5
424	432	163	144	+2982	-22209	-19227	38.50	33.36	68	27	2.6	1.8	24542	2.9	2.9	111031	7.8	13.5
697	615	265	219	-30884	-14843	-45727	38.00	35.59	139	297	2.5	2.3	20893	2.9	1.8	111887	6.7	9.5
9865	9984	3824	3791	+35128	-70695	-35567	38.52	37.87	1814	1519	2.62	2.98	437366			1288150		

DIVISION MARKDOWN REPORT FOR WEEK ENDING 19 JULY 1984

01   ACCESSORIES DIV

DEPARTMENT	MARKDOWNS THIS MONTH					PROG M/DOWNS FOR MONTH	BUDGET M/DOWNS FOR MONTH	PROG P/DOWNS HALF TO DATE	BUDGET M/DOWNS FOR HALF	M/DOWNS HALF TO DATE AS % OF BUDGET M/DOWNS FOR HALF	PROG M/DOWNS AS % PROG SALES HTD	BUD HTD M/DOWNS AS % BUD HTD SALES
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5							
0513	8,561	14,060				X 22,621	10,000!	45,909	38,000	20.8%!	9.9%	7.0%
0547	053	4,045				4,098	5,500!	224,070	26,000	92.5%!	8.1%	7.2%
0555	038	1,569				1,607	5,000!	16,218	19,000	85.3%!	2.8%	2.5%
0628	2,197	675				2,872	8,000!	25,409	29,700	85.5%!	4.4%	4.1%
0644		005				005	100!	4,557	2,000	27.8%!	5.3%	1.7%
0660	065	739				804	1,800!	5,562	8,040	69.2%!	2.8%	3.4%
0686	014	605				619	4,000!	8,713	11,000	79.2%!	4.0%	5.1%
0717	27,683	035				27,718	9,000!	69,755	38,900	79.3%!	37.4%	16.2%
0733	31,892	637				32,529	29,000!	157,184	126,900	23.8%!	28.4%	17.1%
0741	43,749	1,636				45,385	20,000!	186,332	102,100	82.5%!	32.5%	17.3%
0759	49,759	1,171				50,930	23,000!	155,160	104,000	49.1%!	33.0%	16.5%
0767	157	477				320	5,000!	25,731	18,100	42.1%!	21.2%	12.9%
0775	17,510	243				17,753	11,000!	57,880	47,700	21.3%!	24.6%	15.3%
0783	16,679	2,392				19,071	16,000!	125,741	74,000	67.2%!	24.6%	13.4%
5204	1,919	40,716				42,635	34,000!	148,924	170,000	87.6%!	17.6%	16.4%
5254	3,464	149				3,613	1,700!	11,036	12,500	88.2%!	11.8%	6.9%
5301	6,131	5,672				11,803	8,500!	34,457	39,000	87.5%!	10.5%	10.8%
5319		095				095	300!	5,077	3,500	45.0%!	6.1%	3.9%
5610	244	716				960	2,000!	23,508	26,000	89.6%!	13.1%	8.4%
5709	074	2,156				X 2,230	1,600!	10,393	10,000	3.9%!	9.9%	8.3%
5717	2,902	2,196				5,098	5,500!	50,575	52,500	96.3%!	19.7%	14.5%
5725	1,468	3,932				5,400	1,100!	54,411	8,000	80.1%!	60.9%	10.3%
5733		474				474	100!	523	1,500	38.2%!	3.8%	4.6%
5741	010	794				804	500!	483	4,000	37.0%!	3.4%	7.8%
5767	089	444				533	300!	864	2,500	34.5%!	4.2%	7.8%
5775	624	4,901				5,525	2,500!	32,008	14,500	20.7%!	24.4%	11.5%
5903	2,601	12,165				14,766	10,500!	103,796	79,000	31.3%!	18.3%	10.9%
5911	025	265				290	2,000!	30,554	19,000	60.8%!	11.2%	4.2%
5929	006	063				069	700!	2,556	7,000	93.6%!	5.9%	5.5%
5937	7,020	4,846				11,866	4,500!	56,518	40,000	41.3%!	21.0%	10.5%
4818							050!	368		0.0%!	0.0%	0.8%
4826	025	094				119	400!	956	3,102	30.8%!	0.5%	1.5%
4834		055				055	500!	429	3,641	3.5%!	0.0%	0.8%
4842							100!	098		0.0%!	0.0%	0.8%
4850							250!	048	2,005	2.3%!	0.0%	0.8%
4868							100!	1,304	644	2.4%!	2.1%	0.8%
4915	249	1,336				1,585	600!	17,141	5,120	34.7%!	11.3%	3.4%
4923	074	289				363	1,200!	7,675	9,157	83.8%!	2.5%	3.3%
4931	5,554	299				5,853	500!	15,512	3,750	13.6%!	10.7%	3.1%
4949							080!	675		0.0%!	0.0%	0.8%
5018		060				060	400!	7,064	2,626	69.0%!	3.2%	0.8%
5026							200!	640	535	41.7%!	0.3%	0.8%

Appendix 2

Companies Included In Survey

Adams-Maitlands Pty Ltd
Aherns (Suburban) Pty Ltd
A.R. Bailey & Sons Pty Ltd
Barry and Roberts Ltd
Barters Ltd
Best & Less Ltd
Bowen Farmers' Co-op. Association Ltd
Bowrings Ltd
Bracey's Ltd
Bradman's Stores Pty Ltd
Brennan's Pty Ltd
Buckley & Nunn Ltd
Burwood Lake Pty Ltd
Carrolls Ltd
G.J. Coles Ltd
A.J. Connor Ltd
Coutts Ltd
J. Craven & Co Ltd
George Crocker Pty Ltd
J.C. Dahlsen Ltd
Chas Davis Ltd
Demasius Ltd
Dickens & Carey (Trading) Pty Ltd
Dimmeys Ltd
Downes Stores Ltd
R.T. Edwards & Sons Pty Ltd
James Fairley Ltd
Farinosi Group of Companies
Farmers Ltd
Fidler & Webb Pty Ltd
Fields Ltd
Flints Ltd
Foards Ltd
Forges Ltd
Mark Foy's Pty Ltd
T.C. Frith Ltd
George Gatton Ltd
Georges Ltd
Gerard & Co. Ltd
Gowing Bros Ltd
Griffith Co-op Ltd
H.O. Haynes & Sons
R.O. Henderson (Beehive) Pty Ltd
Humphries & Tow Ltd
David Jones Ltd
Katherine Stores Pty Ltd
W. Kellett & Sons Pty Ltd
K-Mart Ltd
Knight's Department Store Pty Ltd
W.D. Leslie Pty Ltd
Darin Lloyd Ltd
JAS Loneragan (Gulgong) Pty Ltd
Malcolm Reid & Co. Ltd

John Martin Retailers Ltd
McDonnell and East Retail Ltd
McKittrick's Ltd
Miller Anderson Ltd
Mimi Investments Pty Ltd
Myers Ltd
Nock & Kirby Ltd
North East Co-op Society Ltd
J.N. Parker & Sons Pty Ltd
Parry Corporation Ltd
Paul's Home Centre Ltd
Pellew & Moore Pty Ltd
Prests Ltd
W.A. Purvis Ltd
Retail Services Ltd
J. Richardson Ltd
Robertsons Store Pty Ltd
Rundle's Holdings Ltd
J.T. Soundy Pty Ltd
James Stewart Ltd
George Swinton & Sons Pty Ltd
Target Australia Ltd
T.J. Treloar Ltd
Venture Stores Ltd
Vox Adeon Ltd
Youngers of Warrnabool
Walter Reid Ltd
Waters Ltd
Walton's Bond Ltd
David Wang Ltd
Woolworths Ltd
J.B. Young Ltd
Hong Yuen Ltd

Appendix 3   Copies of Letter and Questionnaire

General Manager,
Chas. Davis Ltd,
GPO Box 2139T,
Melbourne 3000

Dear Sir,

I am currently enrolled as a student, at Flinders University, for the Research degree of Doctor of Philosophy. I have previously worked in the retail industry for a period of ten years and during that time I occupied various senior management positions in both the merchandising and accounting functions.

Initially in my research, I am directing my efforts to an indepth examination of various merchandising control systems used by retailers in Australia. One of the main questions I will be seeking to answer is whether or not any of these systems impede the maximisation of sales or profits. Obviously this is a very important issue for retailers and so it is expected that the research findings will be of significant interest to the industry at large.

To enable a "start" to be made with the research, I have decided to send out a questionnaire to a limited number of Australian retailers. From the results of the questionnaire, I will be seeking to establish what merchandising budgets are used by retailers and whether the Retail Inventory Method is used as a basis of inventory valuation. Obviously information supplied by companies will be treated as confidential and under no circumstances will any company be identified with the data returned.

It would be very much appreciated if you would feel free to respond to the attached questionnaire. To this end, I have enclosed a stamped addressed envelope for your use. Should any company be interested in receiving a summary of the responses to this questionnaire I will be pleased to supply this, hopefully by December 1985.

I look forward to your response in due course.

Yours sincerely,

D R Goodwin

Company: _____

1   Which of the following general merchandising budgets does
    your company prepare? Please tick the appropriate boxes.

    ( ) Sales budgets, divided into broad merchandise
         categories, eg. Menswear, Electrical, Furnishings, etc.

    ( ) Purchase budgets, expressed in dollars, divided into
         broad merchandise categories, eg. Menswear, Electrical,
         Furnishings, etc.

    ( ) Inventory budgets, expressed in dollars, that cover
         each broad merchandise category.

    ( ) Inventory budgets, expressed in product units, for any
         segment of the company.

    ( ) None of the above.

    ( ) Other budgets not defined above.

    Please give details:

    ....

2   What time span do the above budgets cover? Please tick the
    appropriate boxes.

                        1 mth 3 mths   6 mths 9 mths   1 yr   >1 yr

    i)   Sales   ( )   ( )   ( )   ( )   ( )   ( )
    ii) Purchases   ( )   ( )   ( )   ( )   ( )   ( )
    iii) Inventory $ ( )   ( )   ( )   ( )   ( )   ( )
    iv) Inventory units ( )   ( )   ( )   ( )   ( )   ( )

    ( ) Question not applicable

3   After your company has created the sales and inventory
    budgets for a trading season, is an "open-to-buy budget
    created:

    ( ) for all trading departments?
    ( ) for most trading departments?
    ( ) for some trading departments?
    ( ) for no trading departments?

4   Does your company use the Retail Inventory Method for the
    valuation of inventory?

    ( ) No
    ( ) Yes, but only for internal reporting purposes.
    ( ) Yes. It is used for both internal and external
         reporting purposes using an identical methodology.
    ( ) Yes. It is used for both internal and external
         reporting but using differing methodology.

5   Why does your company prefer the Retail Inventory Method to other methods of inventory valuation which are available? Please tick the appropriate boxes.

( ) The system is less costly to administer.
( ) The information derived from the system is more accurate.
( ) The system enables more timely information to be generated.
( ) The subsequent stocktake process is more straightforward.
( ) The stocktake results are more accurate.
( ) The system is easier to computerise than other methods.
( ) The method is approved for use by the Australian Accounting Bodies.
( ) Other. Please specify.................................
( ) Question not relevant.

6   With regard to those departments in your company that use the Retail Inventory Method, do those departments normally better the "key" budget targets that are set for them?

( ) Yes
( ) No

7   Are incentive payments made, to any member of staff, for the attainment of the following budgets?

		Yes	No
i)	Sales	( )	( )
ii)	Purchases	( )	( )
iii)	Inventory $	( )	( )
iv)	Inventory Units	( )	( )

8   Which of the following does your company seek to maximise? Please tick the appropriate box(es):

( ) Sales turnover so long as a minimum level of profits is attained.
( ) Shareholders' wealth.
( ) Budget attainment.
( ) Lifetime earnings of the company management.
( ) Present value of the company.
( ) Dividend flow to shareholders.
( ) Retention of after tax profits.
( ) None of the above. Our company does not have an objective of maximisation.

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