Paper Title: **Methods for Measuring Shrinkage**

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Abstract

This paper presents findings from research amongst European grocery retailers into their methods for measuring shrinkage. The findings indicate that: there is no dominant method for valuing or stating shrinkage; shrinkage in the supply chain is frequently overlooked; data is essential in pinpointing where and when loss occurs and that many retailers collect data at the stock keeping unit, SKU, level and do so every six months. These findings reveal that it is difficult to benchmark between retailers due to inconsistencies between measurement methods and that there are opportunities for many of the retailers surveyed to improve their shrinkage measurement by adopting known good practice.

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Introduction

Shrinkage is widely viewed as a significant problem in retail management. It is also viewed as an area of opportunity to deliver bottom line profit (Berlin, 1982). However, there are several aspects to shrinkage that lack common agreement, not least there are competing views on how to measure shrinkage; the amount of shrinkage in particular sectors; its causes; and what actions are effective in its reduction. In order to make progress with these various issues a necessary first step is to clarify the nature of the shrinkage problem by establishing an appropriate means of measurement, which is the focus of this paper. In particular, this work examines the methods for measuring shrinkage in Europe's Fast Moving Consumer Goods sector (FMCG), a study supported by ECR Europe, a de-facto trade association for grocery retailers and FMCG manufacturers operating in Europe[2].

Europe's grocery retailing sector had a turnover in 2003 that exceeded €1,000 billion (Beck, 2004). This business sector can be characterised as complex (Pal and Byran, 2003) and with a diverse population of organisations. Across this varied business landscape cuts the common issue of shrinkage. There are a range of different views on this issue with the management attitude in some organisations treating it as a regrettable but inherent part of doing business (Kennish, 1985) while to others it is a key opportunity to improve returns (Berlin, 1982). Recent research into this topic has shown shrinkage to be an important issue for the grocery sector to consider, not least because shrinkage cost Europe's FMCG grocery industry €24 billion in 2003 (Beck, 2004).

Shrinkage has been found to be unevenly distributed and concentrates on certain products and certain locations (Beck, Chapman and Peacock, 2003) with these phenomena termed Hot Products (Clark, 1999) and Hot Stores (Beck and Chapman, 2003) respectively. Hot products are those specific items that incur losses considerably higher than even apparently similar lines, for example a particular product in a particular size of packaging that is affected more than other lines in the same category. Hot stores are particular stores within the same retail chain that have losses more than double the average for that chain. The ability to identify and track these phenomena relies upon the effective measurement of shrinkage by stock keeping unit (SKU) and by location, and to be able to do this over time.

In order to manage shrinkage it is clear that the right metrics must be in place. The objective of this paper is therefore to present a view on the methods for measuring shrinkage and specifically to:

- Review the methods for measuring shrinkage in order to list and describe alternative approaches and methods.
- Establish the extent to which these methods are employed in practice in the European FMCG sector.
- Identify the implications this study's findings may have on methods of shrinkage measurement in the future.

By achieving these aims, this work contributes to the retail industry by drawing together understanding on shrinkage measurement, reporting on common practice and providing a guide to shrinkage measurement.

Methods for Measuring Shrinkage

In order to examine how shrinkage can be measured, a literature review was conducted that deconstructed this topic into (1) the components of shrinkage and (2) methods for valuing shrinkage. These two sub-topics are introduced and discussed below. Shrinkage can result from several causes (Levine and Jackson, 2002). These causes tend to be summarised into either (i) a set of categories or (ii) known and unknown shrinkage. These two approaches are described below.

Categories of Shrinkage

Typically the categorisation of shrinkage tends to comprise four categories. Beck (2003) defines the four categories he uses as follows:

Process Failures
Losses due to operating procedures within the organisation including products which have become out of date, or have been reduced in price; incorrect pricing; product identification errors; incorrect stock counting; products which have been damaged; scanning errors; and errors in deliveries to the stores (e.g. short deliveries due to errors in picking and dispatch from distribution centres).

Internal Theft

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[2] Information on ECR Europe is available on their website, www.ecrnet.org

The unauthorised taking of goods or cash from a store at any time of the day or night by staff employed by the company (including contract staff, for instance third party security staff or maintenance workers). This includes staff theft, collusion between customers and staff, employees eating stock, till shortages and the deliberate manipulation of prices.

External Theft

The unauthorised taking of goods or cash from a store at any time of the day or night by customers or other non-company employees. This includes incidents of shoplifting, fraudulent return of goods, till snatches and burglary (breaking and entering a store whilst it is closed).

Inter-company Fraud

Losses due to suppliers or their agents deliberately delivering less goods than retailers are eventually charged for by them, or retailers deliberately returning fewer goods to manufacturers/suppliers than agreed/specified. This includes vendor and contractor fraud. For retailers this refers to losses due to discrepancies in the goods supplied by third parties and not from their own distribution centres.

Although the nomenclature varies, these four categories are similar to those used by other authors, as shown by the examples contained in Table I.

TAKE IN TABLE I

The differences in nomenclature appear relatively minor and there appears to be a level of consistency between the four sets of categories. However caution still needs to be applied when considering the results of measurement that use these different classification systems as the definitions of what lies within, or is excluded from, is not consistent across them.

Known and Unknown Shrinkage

It is also appears common for shrinkage to be categorised as being 'known' or 'unknown' (Beck et al, 2003) or 'retail crime losses' and 'unexplained stock losses' (Grasso, 2003). Known shrinkage is the loss that has been identified, recorded and processed. Examples of known shrinkage include:

- Known theft processed.
- Known errors processed, such as out-of-date or damages.
- Cost of sales adjustments, such as tasting, mark downs or out-of-date.

- Other, such as donations.

Unknown/unexplained shrinkage is the inventory shortage identified following a physical stock-take. The findings from a physical audit take precedent over the book stock record (Knapp and Knapp, 2000), with the difference between the two numbers being the amount of the inventory shortage.

The nature and causes of unknown shrinkage are not identifiable, hence its name. However attempts are regularly made to apportion unknown shrinkage in to the same categories used to measure known shrinkage (see for example Bamfield, 2004; Beck, 2004; Grasso, 2003; Hollinger and Langton, 2004). These efforts tend to survey the practitioner community and ask respondents to estimate how much of their unknown loss can be attributed to each category. Needless to say, numerous authors express their concerns about this method (for example Beck, Chapman and Peacock, 2003; Bernstein, 1963; Oliphant and Oliphant, 2001) and indicate that the findings from such research are unreliable.

Methods for Valuing Shrinkage

Retail stock can be classified in to a number of different types of stock, including:

- Goods or other assets purchased for resale.
- Consumable stores, e.g. carrier bags.
- Raw materials and components, e.g. a joint of ham to be carved in the delicatessen.
- Work in progress, e.g. partly baked bread.
- Finished goods.

The valuation calculation of each classification will be different, therefore stock can be valued in a different way depending on where it is and how it has been processed. This calculation needs to be consistent with the regulatory instruments, such as the Statement of Standard Accounting Practice and International Accounting Standards. Examples of stock valuation are shown in Table II.

TAKE IN TABLE II

Accounting practices point towards using different methods of valuation of goods depending on their status. The merits of this for financial reporting are undisputable

however it appears that in practice few retailers are able to do this when measuring shrinkage. This would require constantly updated information on each batch of goods concerning their purchase price; their status in the supply chain, i.e. to determine what costs had been incurred during work in progress and whether they had become finished goods; and a view on the saleability of the goods to determine their net realisable value. Instead retailers appear to opt for a more simple method of valuation, such as:

- Sales value.
- Purchase price.
- Transfer cost.

Each of these methods of valuation possesses strengths and weaknesses, which are summarised in Table III.

TAKE IN TABLE III

Each of the valuation methods has its merits and retailers should consider the possibility of using more than one method of valuation. However this raises the concern that data based on different valuations could mix and create more problems than the benefit accrued. This problem would be overcome if the cost components associated with goods were available. Valuation and also conversion between different methods of valuation could then be achieved by including or excluding particular cost components.

In order to gauge current practice, the methods of stock valuation reported in the accounts of selected retailers that support ECR Europe were examined. The findings from these reports are summarised in Table IV.

TAKE IN TABLE IV

Table IV shows the various companies inventory valuation policy categorised against the menu of methods listed in the column headings. Definitions for the inventory valuation methods used in Table IV are provided in Appendix 1.

The main finding from this investigation in to inventory valuation policy is that there is no dominant method for valuing stock and there are examples where companies employ more than one method of inventory valuation e.g. Wal*Mart.

Survey of Methods for Measuring Shrinkage

The literature review identified a range of alternative approaches and methods to measuring shrinkage. In order to establish a view of the current practices employed by European retailers a survey was undertaken.

The survey examined a range of issues relating to shrinkage in the FMCG sector, where one of these issues was the methods used to measure shrinkage. Other issues included the levels of shrinkage and the organisational functions involved in addressing shrinkage the findings of which are to be reported separately, elsewhere. This meant that the survey was fairly long and required an extensive amount of effort to complete. One of the affects of this was to reduce the response level, a point discussed below.

The survey was carried out in 2004 across 25 European countries. Carrying out research that attempts to collect comparable data from different countries is notoriously difficult – besides the obvious problems of language, difficulties can emerge with meaning and terminology. The survey instrument for FMCG retailers was translated into 7 languages (Czech, French, German, Italian, Polish, Portuguese and Spanish) and was distributed to senior members of security departments, audit departments, or senior members of staff with responsibility for loss prevention in major retail companies. Overall, 239 questionnaires were sent out to companies in 25 countries. The sample was selected based upon targeting companies that they were primarily grocery related businesses and had the largest share of the market within their own country (using data sourced from Planet Retail, a company that markets such data). The aim of this approach was to maximise representation within the survey of each national market across Europe. The focus on grocery businesses, as opposed to other types of retailer, reflects the area of interest of the research team and gives continuity to the data returned by these organisations, with each facing similar issues. The implications for generalisability and representativeness are discussed later in this paper.

On average, for those countries selected to be included in the analysis, the market share of the respondents varied between 10 and 40 per cent. In total, the study received 31 responses from retailers, a 13% response rate. These businesses had a total turnover of

€37.2 billion or 13.7% of the total European market share. This response rate is relatively low and therefore restricts the ability to generalise the findings from this work. However the research team viewed 31 responses as providing sufficient information to enable meaningful analysis to take place around a limited set of topics. The analysis method was not unduly affected by the limitations of the sample size as only basic quantitative techniques were employed. This primarily involved entering the data from the returned questionnaires into a MS Excel spreadsheet. This allowed basic counts of the data to be made, for example to determine the frequency (stated as a percentage) that a particular criterion was met. More advanced statistical tests on the data were not necessary as they generally fell beyond the aims of this research.

Results

The results of the survey are presented here under following five headings:

- Finding 1. The extent to which known loss and unknown loss are included in the calculation of shrinkage.
- Finding 2. The supply chain issues included in the measure of shrinkage.
- Finding 3. The extent to which different costing methods are used to value shrinkage.
- Finding 4. The resolution to which shrinkage data is captured.
- Finding 5. The frequency with which shrinkage data is gathered.

Finding 1. The extent to which known loss and unknown loss are included in the calculation of shrinkage

All companies that responded to the survey included unknown loss in their calculation of shrinkage. Ninety percent of respondents also included known loss in their calculation of shrinkage. These findings indicate that most companies consider shrinkage to consist of both known and unknown losses. However not all companies include known loss in their calculation. Those companies that do not include known loss in their calculation of shrinkage appear to define shrinkage as being those losses that can not be attributed to a known cause.

Store Related Issues Included in the Measure of Shrinkage

Known loss can be categorised under a number of headings. Examples of the more common causes of known loss recorded at stores include:

- Out of date, where the shelf life of a good has been reached and it cannot be sold.
- Damage, where a good has been damaged and cannot be sold.
- Price marked downs, where the price of a good has been reduced, e.g. because the good is nearing the end of its sales life or has been damaged.
- Donations, where a good has been donated freely and not sold.

The survey sought to establish which of these categories were normally included by the retailer when calculating their rate of stock loss. The findings from the survey are presented in Table V.

TAKE IN TABLE V

The findings from the survey show that most retailers include out of date, damage and price mark downs in their calculation of shrinkage. A small number of companies include donations. It may be that not all companies have a policy that allows goods to be donated. Equally it may be the case that those companies that do allow donations do not view them as a form of shrinkage. Several companies indicated that they employ 'other' categories under which they classify their loss although this was marked without listing what these categories were.

Finding 2. The Supply Chain Issues Included in the Measure of Shrinkage

Shrinkage can occur in a retailer's supply chain as well as in stores. In order to understand whether this was measured, retailers were asked whether they recorded shrinkage in their supply chain. The findings from the survey are shown above in Table VI.

TAKE IN TABLE VI

These results show that more than a half of retailers include losses in their regional distribution centres in their calculation of shrinkage. Slightly more than a third includes losses in transport, i.e. between distribution centres or between a distribution centre and

the stores. Fewer still included losses by third party logistics service providers in their calculation of shrinkage.

Not all retailers in the survey operate a distribution network, using instead direct distribution to store by suppliers. However these companies are the exception and do not make a notable impact to the results shown above. Instead, the results point to retailers failing to measure the losses that undoubtedly occur in their supply chain.

Finding 3. The Extent to Which Different Costing Methods are used to Value Shrinkage

The discussion presented earlier described the various ways in which shrinkage can be valued. The survey sought to identify which of these methods are used in practice. The results of the survey are shown in Table VII.

TAKE IN TABLE VII

The findings from the survey show that whilst the most common method of shrinkage valuation was the 'retail sales value' method (52%), there is not a dominant method of shrinkage valuation amongst European grocery retailers. Instead there is widespread use of both retail sales value and cost price as the preferred method of valuation. The one method that receives little support is the transfer cost method.

Finding 4. The Resolution to Which Shrinkage Data is Captured

The resolution to which shrinkage data is captured was examined by considering the capture of data for both locations and products. Data on shrinkage can be captured according to the location where it was discovered. Retailers could therefore record location shrinkage for each of their stores. Alternatively they may capture this data for the company as a whole.

Data on product loss can be captured at various levels of detail. The highest detail is at the level of individual stock keeping units, SKU (also known as 'references' in many European countries). Where SKU data is not recorded, losses may be recorded for a category. Categories typically consist of between two hundred and a thousand related products. The lowest level of detail is to collate all loss data together into a single,

company wide shrinkage figure. The findings from the survey of shrinkage data resolution are presented in Table VIII.

TAKE IN TABLE VIII

Companies could report multiple levels of data capture, hence the results do not add up to one hundred percent. With regard to location, companies tended to record their shrinkage by individual store although not all companies did this. Most companies compiled shrinkage for the company as a whole although this was less than the number that reported collating it by store. This shows that not all companies who collect shrinkage data by store compile this data at the company level.

The resolution of data on shrinkage by product shows that most companies have data by SKU, although not all. Two companies that did not collect data by SKU collected their data by category. The remainder collected data at a global level.

Finding 5. The Frequency with Which Shrinkage Data is Gathered

The frequency with which retailers undertake stock audits was the final topic surveyed. Stock audits are a popular mechanism for collecting data and companies have several options on how often to undertake them. Stock audits tend to be undertaken to determine the assets of the company for financial reporting reasons on an annual or bi-annual basis. The amount of goods found to be held by the company can be compared against the company's records, with discrepancies noted. Inventory counting can take place at times other than the stock audit for financial reporting reasons. These instances tend to occur to provide information for stock control. Measurement for stock control seems to occur monthly or less. Given the erratic number of days in months this converts into periods of four or five weeks. The survey sought to establish the frequency with which shrinkage data is gathered in terms of these three time periods of annually, bi-annually and less than five weeks.

A second time related issue explored in the survey was to establish whether retailers audit shrinkage when a store manager leaves. The rationale being that a manager may influence the results of a stock audit, leaving behind a shrinkage issue that could not be attributed to them when it comes to light at a subsequent stock audit. The findings from the survey on the frequency with which shrinkage data is gathered are presented in Table IX.

The survey found that most organisations collect their shrinkage data bi-annually with most of the remaining collecting it annually. Less than fourteen percent of respondents gather data every five weeks or less. No companies reported collecting data when a manager leaves a store.

Discussion of Results

The findings from the survey provide useful insight into the methods for measuring shrinkage used by European grocery retailers. Caution needs to be applied when reviewing these results owing to the relatively small number of respondents to the survey (31 companies), especially when seeking to extend the understanding provided by the findings. With this proviso in mind it still remains possible to paint an overall picture from these findings that reveals pockets of good practice in shrinkage measurement however this appears to be limited to a few companies that possess a system of measurement capable of effectively informing decision making.

At a more specific level of finding, the numbers of retailers that use retail sales value or cost price to value shrinkage are roughly comparable. Both approaches have their merits and issues so the choice of method should depend on company objectives. Caution needs to apply when comparing between levels of shrinkage that have been valued differently, therefore it is important to clarify the valuation method used by a particular company when reviewing its performance.

In light of accounting discrepancies in industry in general, e.g. at Enron, and in grocery retailing in particular, e.g. at Ahold, stewardship cannot be sidelined, highlighting a role for valuing shrinkage at cost price. However effective management of shrinkage presents the opportunity to dramatically improve financial performance and this opportunity needs to be aggressively pursued, which is where valuing shrinkage at retail value is advantageous. This points to the need for both methods for valuing shrinkage to be employed. The challenge for management is to use these methods in harmony, recognising when they should and should not be used and to maintain consistency that allows data to be converted between formats without degradation.

Encouragingly, data is generally gathered on both known and unknown shrinkage. This demonstrates that retailers are aware of both issues when measuring shrinkage in their

stores, although some gaps remain in the consistency with which the range of known losses are reported. Less promising is the low level of data collection in the supply chain. There is a strong indication that when losses in the supply chain are not identified they become attributed to stores. Consequentially the poor level of data collection in the supply chain will over-emphasise the amount of loss in stores and underplay the scale in the supply chain.

The uneven balance in measurement between stores and the supply chain indicates that stores are the main focus for shrinkage management, with the critical role of effective supply chain operations overlooked. This suggests that retailers do not view shrinkage holistically and continue to treat it in a simplistic, isolated manner. Evidence to support this supposition is that despite the focus on shrinkage in stores, retailers are generally limited in their ability to collate detailed data by store and by SKU level or to be able to aggregate this data up for the company as a whole.

A systemic approach requires the ability to gather data at the lowest level and collate it at a macro level for analysis. The results from the survey suggest that retailers are strongest at collecting data at the micro level but the problem is that they are not converting it into macro level data.

Where micro level data is collated to the macro level, this would allow the investigation of phenomena such as Hot Stores and Hot Products. The ability to navigate between top level data and the underlying detail provides the capability to identify where concentrations of shrinkage lie and then to drill in to those key areas of loss in detail using data mining techniques. This capability was not found to be widespread amongst the survey respondents.

A key finding from prior research is the importance of being able to focus attention on Hot Products and Hot Stores. Without the ability to gather data on shrinkage by SKU and by store, retailers cannot focus efforts on to their key areas of loss. Equally, detailed data needs to be accessible so it can be aggregated from SKU and store and analysed at the company level.

Data should be collected on a regular basis to allow decisions to be made on emerging trends and to track the effect of shrinkage management efforts. Good practice is to increase the frequency that data is gathered. The majority of companies reported that they collect data at six-month intervals. Several companies demonstrate that it is possible to

collect data monthly. These frequent updates on performance are likely to reinforce efforts to drive improvements and to keep abreast of changes in the pattern of shrinkage such as its scale, location and types of product affected.

Conclusions

Shrinkage affects shoppers in a number of ways including reduced on-shelf availability, reduced assortment, defensive merchandising and higher prices. None of these provide shopper satisfaction, hence sales are depressed and profits foregone. In addition to lost sales, shrinkage also affects the profits of retailers through associated additional cost.

The findings from this research respond to this situation by reviewing the measures needed to inform management decision making and identifying good practice in place in the sector. In summary, this consists of collecting data:

- By product and location.
- Frequently, robustly and consistently.
- Across the supply chain, in stores (sales floor and back of store), transportation and distribution centres.

This data will clearly identify where shrinkage is occurring and inform management decision making on where to direct corrective action to control loss.

The scale of the impact of shrinkage on shopper satisfaction and retailer profitability is sufficient to warrant senior management attention and investment in gathering the data necessary to guide management decisions. An effective response requires the development of a measurement system that consists of two parts:

- A database containing a breakdown of the cost components of each SKU.
- Data on shrinkage by SKU, by location (e.g. store or distribution centre), and by time.

The first part of the measurement system provides reference data on each product, which would be set up when a product is introduced by the retailer. This provides the cost breakdown of a single unit. The second part of the measurement system provides a record on how many items are lost, from where and when. When brought together, these two data sources provide a valuable input to management that informs them on the overall

scale of shrinkage and both cost and lost profit implications. This data will enable them to determine where and when losses occur, allowing resources to be deployed to diagnose, address and resolve key issues.

It is acknowledged that data should be reported to different people in different ways. For example it seems likely that store managers need different information than buyers and the same will be true for other key stakeholders such as regional security managers, Board members, the media and shareholders. It is therefore the case that having the capability to measure shrinkage is only one component of the overall challenge of reducing shrinkage. There remains the challenge of being able to make good use of these measures through data analysis (e.g. data mining) and through dissemination of key summaries to the various stakeholders required to direct and undertake concerted action.

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Appendix 1. Definitions of Inventory Valuation Methods

Average Cost (AVCO)	A method of unit cost determination, often applied to stocks. An average unit cost is calculated when a new purchase quantity is received by dividing the sum of the cost of the opening stock plus the cost of the acquisitions by the total number of units in stock. **CIMA Management Accounting** **Official Terminology 2000 Edition**
First In, First Out (FIFO)	The principle that the oldest items or costs are the first to be used. Most commonly applied to the pricing of issues of materials, based on using first the costs of the oldest materials in stock, *irrespective of the sequence in which actual material usage takes place*. Closing stock is therefore generally valued at relatively current costs. **CIMA Management Accounting** **Official Terminology 2000 Edition**
Last In, First Out (LIFO)	A little-used method of pricing the issue of material using the purchase price of the latest unit in stock. More often used, in the USA, a method of valuing stock using indices to charge most recent prices against profits. **CIMA Management Accounting** **Official Terminology 2000 Edition**
Retail Method	An inventory valuation method designed to allow a retailer to take physical inventory at retail selling prices and then deduct an amount determined to reflect gross profit. http://www.irs.gov/businesses/page/0,,id%3D6988,00.html Accessed 20th October 2004

Author	Categories of Shrinkage			
Beck, Chapman and Peacock, 2003	Process failures	Internal theft	External theft	Inter-company fraud
Guthrie, 2003	Administrative error	Employee theft	Customer theft	Theft by supplier
Hollinger and Langton, 2004	Administrative / paper error	Employee theft	Shoplifting	Vendor fraud
Leaver, 1993	Poor administration	Employee theft	Consumer theft	Supplier theft
Oliphant and Oliphant, 2001	Administrative error	Employee theft	Shoplifting	Vendor fraud

Table I. Categories of Shrinkage Employed by Various Authors

Stock Type	Method of Valuation
Raw Materials	Purchase price but are reduced to net replacement cost if lower.
Work In Progress	Valued at the cost of materials plus manufacturing labour and overheads.
Finished Goods	Valued at the lower of purchase price, manufacturing cost and net realisable value.

Table II. Examples of Stock Valuations. (Source: Chopping and Stephens)

Method of Valuation & Definition	Strengths	Weaknesses

Sales value. *The sales price of the good*	• Presents a big number that grabs attention. • Factors in the margin. • Easiest valuation to find.	• Margin is not always fully understood (e.g. purchasing margin versus sales margin).
Purchase price *The price that the good was purchased for*	• Most compatible measure with balance sheet & tax dept. calculations. • Prudent (accounting) approach.	• Fails to accommodate overhead apportioning. • Need to know the margin if working back from sales price.
Transfer cost *Purchase price plus apportioned costs*	• The valuation of all costs incurred. • Useful when dealing with retail brands.	• Most difficult to calculate.

Table III. Strengths and Weaknesses of Alternative Methods of Shrinkage Valuation

Company	Inventory Valuation Method						
	Retail Method	Retail Price	Purchase Price	FIFO	AVCO	AVCO / FIFO	AVCO / LIFO
Ahold (2003)				✓			
Auchan (2003)			✓	✓			
Carrefour (2004)			✓				
Focus Wickes (2002)			✓				
Marks & Spencer (2004)	✓						
Metro (2003)					✓		
Sainsbury (2004)				✓		✓	
Sonae (2003)					✓		
Tesco (2004)		✓					
Wal*Mart (2004) Domestic	✓ (LIFO)						
Wal*Mart Foreign Operations	✓ (FIFO)						
Sam's Club							✓

Table IV. Inventory Valuation Policy. (Source: Company's Report and Accounts (year in brackets))

	Out of Date	Damage	Price Mark Down	Donations	Other Process
Survey Results	77%	77%	61%	23%	16%

Table V. Store Related Issues Included in the Measure of Shrinkage

	Losses at RDCs	Losses in Transport	Losses by 3PLs	Other
Survey Results	58%	35%	19%	0%

Table VI. Supply Chain Issues Included in the Measure of Shrinkage

	Retail Sales Value	Cost Price	Transfer Cost	Other
Survey Results	52%	39%	3%	6%

Table VII. The Extent to Which Retail Sales Value, Cost Price or Transfer Cost are Used to Value Shrinkage

	Company	Store	Category	SKU
Survey Results	61%	84%	55%	71%

Table VIII. The Resolution to Which Shrinkage Data is Captured

	Annually	Every 6 months	Every 5 weeks or less	When Manager Leaves
Survey Results	21%	66%	14%	0%

Table IX. Frequency of Stock Audits.