PAPER TITLE: **SHRINKAGE IN EUROPE: STOCK LOSS IN THE FAST MOVING CONSUMER GOODS SECTOR**

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Abstract

This paper presents the findings of the first pan-European survey of companies within the Fast Moving Consumer Goods sector. It provides a discussion on the definition of shrinkage and presents data on the extent, nature and causes of stock loss throughout the supply chain – from point of manufacture through to point of sale – as well as some of the approaches adopted to tackle the problem. It highlights the role of security and audit departments in minimising losses, and the need for companies to adopt a more strategic approach by involving not only other parts of their own organisations, but also co-operating with other companies within the supply chain. It concludes that unless companies begin to realise the extent of the problem and that all points of the supply chain are vulnerable to a wide range of threats, then losses will continue to represent a significant proportion of their annual turnover.

Key words: Shrinkage, stock loss, company collaboration, loss prevention

SHRINKAGE IN EUROPE:
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INTRODUCTION

The European Fast Moving Consumer Goods, FMCG,[1] sector is a significant business sector, with a combined turnover in 2000 of €824.4 billion[2]. It is a complex, highly competitive market and it is not unusual to find some retailers with a product range in excess of 20,000 items, while many manufacturers now have logistical webs covering every European country. In this complex and competitive environment most FMCG manufacturers and retailers consider a modest level of stock loss, often euphemistically termed 'shrinkage'[3], as an accepted part of doing business.

Research in the US, UK and elsewhere has begun to identify the broader extent of the stock loss problem[4]. These studies have served to raise awareness of the overall scale of stock loss and shown it to be an important issue for organisations to consider. However, to date such studies have been country-specific or have a narrow perspective such as a focus on a particular retail market segment or the more crime-oriented aspects of shrinkage such as customer and staff theft.

In order to establish a more definitive account of the extent and nature of the problem of stock loss in the FMCG sector a programme of research was conducted across retailers and manufacturers in this sector, through fifteen European countries. This research was designed to provide a wide geographical coverage and to consider the entire span of the supply chain from manufacture, through distribution and to retail outlets. This paper presents the results from this research and discusses the implications of these findings.

DEFINING SHRINKAGE AND THE SUPPLY CHAIN

In order to frame this research, it was important to first define the term ‘shrinkage’ and contextualise it with respect to the functions of supply chains. Throughout the supply chain, from the first delivery of raw materials to a manufacturer, to the point at which a consumer takes a finished product out of a store and beyond, there are a number of opportunities for products to be either lost, broken, stolen, consumed, under priced or go out of date. Some of these events are due to the unintended outcomes of processes used within companies such as methods of pricing, stock counting or errors in deliveries. Other events are malicious in nature; suppliers deliberately under delivering, customers taking goods from stores, staff helping themselves to the stock or the cash in the tills.

Most commentators define shrinkage narrowly as ‘unexplained loss of physical inventory’[5], although this excludes those losses that can be explained, such as items going beyond their sell by date and the theft of cash. For the purposes of this study, a broader definition was used encompassing four main types of stock loss: supplier fraud, process failures, internal theft and external theft. Supplier fraud is defined here as those losses due to suppliers, or their agents, deliberately delivering fewer goods than companies are eventually charged for, which included vendor and contractor fraud, and also referred to losses due to discrepancies in the goods supplied by third parties (but not from companies’ own distribution centres, DCs). Process failures were considered as losses due to the operating procedures within the organisation, including products that have gone out of date, or have been reduced in price; incorrect stock counting; products that have been damaged; scanning errors and errors in deliveries to stores, for example, short deliveries due to errors in picking and dispatch from distribution centres[6]. Internal theft was defined as being, the unauthorised taking of goods or cash

from premises at any time of the day or night by staff employed by the company; this included contract staff, for instance third party security staff or maintenance workers. Internal theft also included staff theft, collusion between customers and staff, employees eating stock, till shortages and the deliberate manipulation of prices for personal gain. External theft was defined as, the unauthorised taking of goods or cash from any of the companies' premises (or vehicles, in the case of manufacturers) at any time of the day or night by customers or other non-company employees. This included incidents of shoplifting, fraudulent return of goods, till snatches and burglary.

Given this definition, it is important to locate shrinkage within a broader picture of business operations and the supply chain. In theory retailing is a simple business, with the ultimate goal being to move products from point of production, through distribution and warehousing, on to the retail store and ultimately to the point of sale, where the contended consumer takes it home. However, throughout this perceptively simple flow of products is a plethora of possibilities for stock and cash to be lost and become defined as 'shrinkage'.

Insert Figure 1 about here

But, in any organisation a filter or barrier exists that stands between either stock remaining in the supply chain or becoming redefined as shrinkage. The barrier, is the policies, procedures and practices adopted by an organisation to manage its entire business, including stock loss, and is often termed 'operations management'. For example, how goods are loaded on to a pallet and then on to a vehicle. How goods are received at a warehouse, then counted, collated and dispatched onwards along the supply chain. How audit departments monitor and check the movements of goods

through the business. How store staff restock the shelves, operate the tills and move between different parts of the store. How security operatives respond to electronic article surveillance alarms or check the lockers used by staff. It is a long and complex list encapsulating every activity that is carried out by the business. But, the efficiency, quality, rigorousness and focus of operations management ultimately defines the extent to which products are diverted away from their intended journey along the supply chain to the customer. For the purposes of this research, the supply chain was limited to the point at which the completed goods left the manufacturers' factory to the point at which customers paid for the goods at the till in the retail store. Several key stepping points along this process were identified and respondents were asked to provide information on stock loss at these nodes. These were manufacturer distribution centres, retail distribution centres and the retail stores themselves.

METHODOLOGY

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[7]. This study is the first of its kind to try and gather detailed information on the extent of shrinkage across Europe and the approaches adopted by retailers and their suppliers to deal with the problem. One of the difficulties that emerged at the start of the study was the lack of an agreed pan-European definition for shrinkage. It is an 'elastic' term encompassing many different components of loss depending upon the type of company, range of products and location within Europe. It was therefore important to develop a workable definition that would enable not only companies to complete the questionnaire as fully as possible, but also enable 'like with like' comparisons to be made by the research team (See earlier). The research was

funded by ECR Europe[8] and received the active support of 15 major European retailers and manufacturers[9] through their participation on a steering group for this study.

The research made use of two questionnaires: one for grocery retailers and one for FMCG manufacturers. The principal difference between the two questionnaires concerned the wording used, which reflected the differing business contexts of the two groups of respondents. Both questionnaires asked for information on five areas: company information; extent, nature and impact of stock loss within the company; methods for recording stock loss; company responses to stock loss and the nature of collaborative efforts to tackle stock loss. To try and encourage as high a response rate as possible, the questionnaire for retailers was translated into 7 languages (Danish, French, German, Greek, Italian, Polish and Spanish). The questionnaires were sent to named senior members of security departments, audit departments, or senior members of staff with responsibility for loss prevention. Where necessary, a follow-up letter and a further copy of the questionnaire was sent to companies that had yet to respond. In addition, where possible, electronic versions of the questionnaire were also sent out to respondents.

The retailer questionnaires were sent to 173 companies in 20 European countries. The sample was selected based upon targeting companies that had the largest share of the market within their own country, with the aim being to gain responses from retailers that controlled at least 30 per cent of the market in each territory. The study received 38 responses from retailers, a response rate of 22 per cent[10]. These respondents had a combined turnover of €121.9 billion or 14.78 per cent of the total European market share. The rate of response varied considerably between countries although sufficient

information was received to enable meaningful analysis to take place on companies from 15 different countries.

The sample of manufacturers was limited to companies with a 'pan-European' presence that supply a wide portfolio of branded products to retailers. Companies possessing these characteristics operated in a number of sectors, including alcoholic beverages, cleaning products, cosmetics, cooked foods, toys and electrical goods. In total, 29 companies were sent a questionnaire. Responses were received from 14 companies, a response rate of 48 per cent, who had a combined turnover of €61.7 billion. Under represented in the sample are companies that provide fresh produce such as meat, fish and vegetables.

Throughout this article, all values are stated in euros, although the original research instrument requested company figures in the local currency. These were then converted using the average currency exchange rate for 2000. In order to overcome the problem of varying start dates for financial years in different countries, the survey opted to ask respondents to comment on their 'last full financial year', together with the previous full financial year.

Pan-European estimates of the cost of stock loss were derived from three sources of information. First, estimates of the value of stock loss in retailers were obtained from the question, '…what was the total value of stock loss at retail value (including taxes) as a percentage of total sales', while manufacturers were asked, '… what was the total value of stock loss at net sales value as a percentage of total sales'. Secondly, all respondents were asked to state their company turnover[11]. Thirdly, published figures on the total size of the FMCG sector in each country were used. From these data, it was

possible to extrapolate to generate firstly, a countrywide figure for stock loss and secondly, a pan-European figure.

Few companies, either retailer or manufacturer, were able to provide data for every question in the surveys and some of the questions asked respondents to comment on known and unknown loss. This clearly relied upon them using their knowledge and experience to estimate what the requested breakdown might be. It is also important to recognise that given the sampling methodology adopted (targeting those companies with the largest percentage of the market), small-scale retailers are completely excluded from the process. It is also important to emphasise that the data represents only those companies operating in the FMCG sector and so excludes a significant proportion of the retail sector, such as specialist outlets selling only clothing, electrical, pharmaceutical or hardware[12]. However, despite the complexity of the project and the difficulty of collecting data on the sensitive and often hidden topic of shrinkage, it is felt that sufficient data was collected to allow the first robust assessment of the extent of the problem of stock loss in the FMCG sector in a European setting.

SHRINKAGE IN THE FAST MOVING CONSUMER GOODS SECTOR

The research on retailers and manufacturers was intended to provide information for the first time on the cost of shrinkage to the FMCG sector across Europe. It was also interested in finding out where in the supply chain losses occurred, how much of shrinkage was known and unknown to business, what were perceived as the key causes of stock loss, to what extent organisations collaborated both internally and externally, and what impact if any the use of specialist teams had on dealing with the problem.

Size of the Problem

The total cost of shrinkage for the FMCG sector in 2000 was calculated at €18 billion. This amounted to €13.4 billion for retailers and €4.6 billion for manufacturers. Put another way, this is equivalent to €50 million a day or the annual gross domestic product of Luxembourg. In terms of a percentage of turnover, it was calculated that shrinkage accounted for 2.31 per cent – 1.75 per cent for retailers and 0.56 per cent for manufacturers. Given that the average profit margin for European food retailing is approximately 3 per cent, then stock loss is equivalent to 50 per cent of total profit[13].

Insert Table 1 somewhere here

While comparisons with other studies are fraught with methodological difficulties, these estimates of the European-wide percentage of stock loss are comparable with a similar study carried out by the University of Florida in 1997, which found that supermarkets and retailers in the USA lost, on average, 1.69 per cent of total retail sales[14].

Location of Stock Loss

Identifying where stock loss occurs within the FMCG supply chain was an important objective of the research. To date most studies on stock loss in the retail sector have focused on the store as the primary node of analysis, with little work being conducted on the vulnerability of the rest of the supply chain to loss[15]. From the data obtained from manufacturers and retailers, it was possible to look at three points along the supply chain: the manufacturer distribution centre, the retail distribution centre and the retail store[16].

Insert Table 2 about here.

The results show that significant losses occur at each point in the supply chain process, although the retail stores are seen to be the place where two-thirds of all shrinkage takes place (66%). In many respects this is not surprising – it is the point at which 'customers' enter the stock loss equation; mainly to browse and buy, but sometimes also to steal, eat and damage stock. It is also the point at which perishable goods usually meet their 'sell by dates', at best triggering price reductions and at worse causing stock to be destroyed. However it is clear that other stages in the supply chain are responsible for significant losses as well and can critically affect the efficiency and effectiveness of the sector. Some €6.1 billion disappears at distribution centres or while goods are in transit – €4.6 billion going missing while goods are in manufacturer distribution centres or on the move to customers, and a further €1.5 billion lost while stock is held in retail distribution centres or in transit to the stores. This data certainly highlights the importance of seeing shrinkage as something that needs to be addressed at all points of the supply chain and not simply considered as a retail store problem.

Known and Unknown Stock Loss – The Shrinkage Iceberg

The surveys asked retailers and manufacturers what percentage of loss within their organisation was known and unknown. This is a critical question underpinning any attempts at explaining the causes of stock loss and at the same time undermining efforts designed to respond to the problem. The term 'unknown' is used to describe shrinkage where the company has no records of when, what or where the loss took place.

Insert Table 3 about here.

For retailers, the majority of stock loss was unknown (59%) accounting for €7.9 billion of losses. For manufacturers, it was a slightly better picture, with the majority of losses

being known to the company (59%). However, even they could not account for nearly two-fifths of all their stock loss, equating to €1.9 billion. Taken together, the FMCG sector could not account for the majority of their losses – almost €10 billion or €192 million per week. The difference between the two parts of the sector is readily explicable. Retailers have the added factor of direct interaction with customers who add the not inconsiderable risk of external theft to the equation[17]. They also have significantly more product lines to manage through the supply chain (sometimes in excess of 20,000), often delivered by a multitude of third-party providers and suppliers, which adds appreciably to the complexity of the business and the opportunities for stock loss not to be either noticed or recorded.

When asked about the methods adopted to record shrinkage, it was found that a significant number of companies either had no system in place or used a paper-based system for recording all forms of shrinkage. Some 12 per cent stated that no record was kept at all of process failures, with 50 per cent of companies indicating that records of this type of loss where simply recorded on paper files within the store. Both internal and external theft was prioritised much less by companies – between 14 and 21 per cent of respondents kept no records at all, and only between one-fifth and one-quarter maintained a computerised system for recording such incidents.

It is difficult to get strictly comparative data from other sources on the extent of known and unknown losses. A number of UK produced reports, which have looked only at the problems of crime against all retailers, tend to suggest that only between 20 and 30 per cent of loss is known to retailers[18]. The higher figures of known loss presented here can be partly explained by the fact that this study includes stock losses through process failures, which are more routinely and systematically recorded by retailers and are

therefore more easily identified within the overall losses due to shrinkage than crime-related incidents such as theft.

Such an information deficit has been highlighted elsewhere, and is often the consequence of poorly designed and maintained stock loss databases or the methods adopted to carry out audits, particularly within retail stores[19], and is also partly due to a lack of prioritisation of the problem within the business. This has significant implications for organisations and the way they respond to their stock loss problem: certainly without access to reliable, timely and complete data, any response is likely to be poorly informed, partial, inappropriate and ineffective[20].

Causes of Shrinkage

Countless studies have been carried out, particularly in the retail sector[21], trying to identify the main causes of stock loss. In some respects it is the holy grail of stock loss control, as a reliable, accurate and up-to-date breakdown of the causes of shrinkage can effectively guide the strategies organisations adopt to tackle the problem. Unfortunately, the data presented above on the extent of stock loss that is unknown, effectively undermines any attempts to understand the true picture of the proportions each type of shrinkage makes up of the whole. Therefore, any estimates rely upon the perceptions of those providing the data, which are based upon their own prejudices and priorities. A similar approach was adopted with this research although the interest was more in the perceived differences between manufacturers and retailers than in the absolute breakdowns offered by respondents. Detailed below in Figures 2 and 3 are the estimates provided by retailer and manufacturer respondents broken down into four areas: supply fraud, process failures, internal and external theft.

Insert figures 2 and 3 about here.

For retail respondents, external theft was perceived as the main cause of stock loss (37%), followed by process failures (27%), internal theft (24%) and finally supplier fraud, which was thought to make up 12 per cent of all shrinkage losses. Taken together, theft was considered to account for nearly two thirds of all losses (61%) or €8 billion. In contrast, manufacturers identified process failures as the biggest culprit – 78 per cent of all losses. Both internal and external theft were thought to equally account for the

[1] The term Fast Moving Consumer Goods Sector is used here to mean those retailers and their suppliers who provide a range of goods sold primarily through supermarkets, and hypermarkets. The core of their business is providing 'essentials' such as various fresh and processed foodstuffs, but they also stock a wide selection of other goods as well including health and beauty products, tobacco, alcohol, clothing, some electrical items, baby products and more general household items. Examples of FMCG retailers include Auchen, Carrefour, Coop Italia, ICA, Interspar, Tesco and Walmart. Examples of FMCG manufacturers include Allied Domecq, Gillette, Johnson and Johnson, Proctor and Gamble and Unilver, In the USA, this sector is also referred to as the Consumer Product Goods sector.

[2] M+M Euro Trade (2000) *Trade Structures and the Top Retailers in the European Food Business*, Frankfurt: M+M Euro Trade.

[3] The terms 'shrinkage' and 'stock loss' will be used interchangeably throughout this article.

[4] In the UK see the annual reports by the British Retail Consortium on the costs of crime to the retail sector; and Mirrlees-Black, C. and Ross, A. (1995) *Crime Against Retail and Manufacturing Premises: Findings from the 1994 Commercial Victimisation Survey*, Research Study Number 146, London: Home Office. In the USA see Young, A. (1986) *National Mass Retailing Institute Security Survey*, New York: NMRI; and Hollinger, R. and Hayes, R. (2000) *National Retail Security Survey*, Gainsville: University of Florida. In Germany see EuroHandelsinstitut (2000) *Inventurdifferenzen 2000: Ergebnisse einer aktuellen Erhebung*, Cologne: EuroHandelsinstitut.

[7] Mawby, R.I. (1999) 'Approaches to Comparative Analysis: the Impossibility of Becoming an Expert on Everywhere', in R. Mawby (ed) *Policing Across the World: Issues for the Twenty-First Century*, London: UCL Press.

[8] Efficient Consumer Response (ECR) represents both retailers and manufacturers and has a stated aim to 'encourage companies to work together to integrate their operations and eliminate barriers that reduce their efficiency and effectiveness, and impact on their ability to satisfy consumers'. Further details can be found at: ecr@ecreurope.com.

[9] A report from this work is available from ECR Europe: Beck, A., Bilby, C., Chapman, P. and Harrison, A. (2001) *Shrinkage: Introducing a Collaborative Approach to Reducing Stock Loss in the Supply Chain*, ECR Europe: Brussels.

[10] Newell states that most postal questionnaires do not achieve a response rate of more than 50 per cent and can usually expect no more than 20-25 per cent. Newell, R. (1993) 'Questionnaires', in: Gilbert, N. (ed), *Researching Social Life*, London: Sage.

[11] These figures were validated from data provided by M+M Euro Trade (2000), op cit. Where discrepancies were found, the company was contacted by telephone or email and the correct turnover figure confirmed.

[12] Such items may also be sold within the FMCG sector.

[13] Calculated from data provided by ECR Europe.

[14] Hollinger, R., Dabney, D. and Hayes, R. (1999) *National Retail Security Survey*, Gainesville, Florida: University of Florida.

[15] For example, see the retail-related chapters in the two Volumes of Crime at Work edited by Gill, such as Beck, A. and Willis, A. (1998) 'Sales and Security: Striking the Balance', in Gill, M. (ed) (1998) *Crime at Work: Increasing the Risk to Offenders, Volume II*, Leicester: Perpetuity Press, pp 95-106; or Bamfield, J. 'A Breach of Trust: Employee Collusion and Theft from Major Retailers', pp 123- 142, in the same Volume.

[16] Loss of goods while in transit from one node to another was included in the figures for the node sending the goods in the first instance. For example, the value of goods lost while in transit from the manufacturer distribution centre to the retail distribution centre were included in the total for the former supply-chain node rather than the latter.

[17] See Arboleda-Florez, J., Durie, H. and Costello, J. (1977) 'Shoplifting: An Ordinary Crime?', *International Journal of Offender Therapy and Comparative Criminology*, Vol. 21, No. 3, pp 201-7; Murphy, D. (1986) *Customers and Thieves*, Aldershot: Gower. Kleine, L W. (1992) *The Sociology of Shoplifting: Boosters and Snitches Today*, London: Greenwood Publishing Group; Farrington, D. P. and Burrows J. N. (1993) 'Did shoplifting really decrease?' *British Journal of Criminology*, Vol. 331, Winter, pp 57-69; Butler, G. (1994) 'Shoplifters' views on Security: Lessons for Crime Prevention', in Gill, M. (ed) (1994) *Crime at Work: Studies in Security and Crime Prevention*, Leicester: Perpetuity Press; Gill, M., Bilby, C. and Turbin, V. (1999) 'Retail Security: Understanding What Deters Shop Thieves', *Journal of Security Administration*, Vol. 22, No. 1, pp 29-39;

remaining 22 per cent (11% each), although this still equates to €1 billion of losses due to malicious activities.

While such data needs to be interpreted with some caution, there are two interesting points it raises. First, retailers do not see any one cause as dominating their thinking – all four factors receive between 12 and 37 per cent of the total. This highlights the importance of recognising that retail stock loss practitioners face a myriad of threats and that any ameliorative actions need to take account of this. Secondly, manufacturers have a much clearer perception of the single most important threat to their business – that of process failures. This directs attention more towards the policies, procedures and practices they adopt to store, move and monitor their merchandise rather than the explicit threat posed by thieves.

Company Collaboration

The problem of shrinkage transcends departmental and company boundaries – it is a common problem requiring shared solutions. The research was interested in gauging the extent to which organisations currently co-operated both internally, for example

Hayes, R. (1999) 'Shop theft: An Analysis of Shoplifter Perceptions and Situational Factors' *Security Journal*, Vol. 12, No. 2, pp 7-18.

[18] See for instance the British Retail Consortium's report *Retail Crime Survey 1999* (2000), London: British Retail Consortium.

[19] See Turbin, V. (1998) 'Shrinkage Figures and Data Corruption: Lies, Damned Lies and Statistics?' In Gill, M. (ed) *Crime at Work: Increasing the risk for offenders.* Vol. II, Leicester: Perpetuity Press, pp 25-34.

[20] Masuda, B. (1992) 'Displacement vs Diffusion of Benefits and the Reduction of Inventory Losses in a Retail Environment', *Security Journal*, Vol. 3, No. 3, pp 131-136; Baron, V. and van Zwanenberg, N. (1999) 'Cues, Needs and Decisions. A Lens Model of Security Operations', *Security Journal*, Vol. 12, No. 3, pp 41-55. For a discussion on the reliability of anecdotal evidence on crime hot spots see Ratcliffe, J.H. and McCullagh, M.J. (2001) 'Chasing Ghosts? Police Perceptions of High Crime Areas', *The British Journal of Criminology*, Vol. 41, No. 2, pp 330-341.

[21] Edwards, L.E. (1958) *Shoplifting and Shrinkage Protection for Stores*, Springfield Ill.: Charles C. Thomas; Dickenson, S. (1970) 'Theft and the Retailer', *Security World*, pp 171-4; Bleakley, R. (1977) 'Stock Losses in Retail Stores', in Challinger, D. (ed) *Studies in Shoplifting*, Sydney: Australian Crime Prevention Council; Byrne, D. and Jones, P. (1977) *Retail Security: A Management Function*, Leatherhead: 20th Century Security Education Ltd; Guerts, M. (1980) 'Inventory Shrinkage in Retail Stores: Costs and Causes', *Retail Control*, Vol. 48, No. 10, pp 35-49; Janeczek, T.R. (1981) 'Inventory Shortages: Real or Imagined? A Review of Common Causes', *Retail Control*, Vol. 49, No. 8, pp 17-29; Berlin, P.D. (1982) 'Why Does Low Shrinkage Seem So Tough to Achieve?', *Retail Control*, Vol. 50, No. 10, pp 14-20; Berlin, P.D. (1983) 'Checklist of Key Shrinkage Indicators', *Retail Control*, Vol. 53, No. 7, pp 36-39; Chin, L. (1987) 'Abnormal Shrinkage Audit: Approaches at J.C. Penny', *Retail Control*, Vol. 55, No. 8, pp 4-6; Peter Berlin Retail Consultancy Group Inc. (1988) *Report on Shrinkage Control*, New York: Peter Berlin Retail Consultancy Group Inc; and Burrows, J. (1988) *Retail Crime: Prevention Through Crime Analysis*, Crime Prevention Unit Paper No. 11, London: Home Office.

between departments, and externally, for example between retailers, third party logistics suppliers and manufacturers, to develop shared strategies for dealing with the common problem of shrinkage. In order to quantify levels of collaboration both retailer and manufacturer respondents were asked to rate the extent to which a range of organisational departments were involved with stock loss within their organisation. The results of this are presented in Figure 4, below.

Insert Figure 4 about here.

In terms of retailers, 83 per cent stated that store management were regularly or highly involved in dealing with the prevention of stock loss. Similarly, a significant proportion of respondents (60%) also felt that their human resources/personnel department were involved to an equivalent level. Both of these groups featuring highly is perhaps not surprising; store management teams are on the 'front line' in terms of trying to tackle shrinkage problems, while personnel departments will have involvement in integrity checks and disciplinary action against dishonest members of staff[22]. Of note, less than one-half of companies indicated that their finance and auditing, and supply chain management teams were regularly or highly involved in loss prevention. Both these groups have a potential role in responding to the problem of stock loss. For instance, the audit team could help by providing more accurate data on the level and extent of loss, which should be viewed as a critical first step in tackling any problem, while the supply chain management team could help to look at the problems relating to delivery errors and damage to stock, questioning whether the appropriate systems are in place for receiving goods and whether staff follow company policies and procedures[23].

Those deemed to be the least involved within the retail sector were the buying, marketing, IT and legal departments, with only a small proportion of respondents stating

that they were regularly involved. Once again, each of these departments could play a role in dealing with shrinkage. For instance, company buyers could benefit from awareness of the potential problems new products may pose both in terms of risk from process failures and from theft. Similarly, the marketing department could consider risk of stock loss when making decisions on the manner with which products are displayed stores, including the implications of promotional displays on existing security equipment (for instance, will proposed signage obscure CCTV cameras or lines of sight for members of staff?[24]). Likewise, IT departments could look at their existing systems and see whether different types of process failure could be 'designed out'. Finally, the legal department could become involved in a number of different ways, including looking at how the existing legislative framework could be used to protect the company, for example against persistent shoplifters[25].

Within the manufacturing sector, finance and auditing were revealed as the team considered the most involved in stock loss reduction, with 85 per cent of respondents rating them as regularly or highly involved. The next most involved team was thought to be those responsible for managing the factories and distribution centres (69% thought they were regularly or highly involved). These two departments were seen to be much more involved than any of the other teams listed, and were then followed by a group of three teams who could be described as being involved with shrinkage control at an intermediate level: factory and DC planning and design; the security/loss prevention department; and the board of directors. The low ranking of security/loss prevention departments in the control of stock loss may seem surprising, but this is probably explained by the perceived predominance of process failure as the primary area of loss and the general absence of this department within a large proportion of companies

taking part in this survey. In addition, where there is a security/loss prevention department, it may be seen as being responsible primarily for the physical security of sites and dealing with the risk of theft – not ranked highly as major concerns within the issue of shrinkage. The final group of teams were considered very much at the periphery of helping to deal with the problem of shrinkage. They were: research and development; the IT department; and human resources. This is somewhat surprising given the potential role each of these departments could have in dealing with shrinkage. Certainly the relationship between product and package design and the potential for goods to be damaged would seem clear, as would the role of the IT department in developing management systems which may cut down problems caused by delivery or picking errors. Similarly, the human resources team could become more involved, for example in looking at the human aspects of why company staff do make picking or delivery errors and how staff interface with the management systems currently in place.

Inter-company collaboration, for retailers, was characterised by an emphasis on rather reactive activities with security providers and the police; installing security hardware or charging shop thieves. Relatively few pointed to work with individual manufacturers or their representative organisations. Manufacturers were even more isolated with less than 1 in 3 indicating that they had ever worked with an individual retailer on issues of stock loss and most focused their rather sparse co-operative efforts on working with third party logistics service providers.

Use of Specialist Teams

More encouragingly, the research found that companies employing dedicated security/loss prevention departments and audit departments suffered much lower losses due to shrinkage.

Insert Table 4 about here.

For those retailers with a security/loss prevention department, the level of stock loss was 27 per cent lower, with those with this function achieving a rate of 1.37 per cent compared with those without such a department suffering losses at 1.86 per cent. Similarly, manufacturers with such a specialist department also reported significantly lower levels of loss – nearly 50 per cent lower levels of stock loss as expressed as a percentage of turnover.

In addition, those retail companies with a dedicated audit department had losses 39 per cent lower than those companies without such a function. This picture was mirrored in the data from manufacturers where the difference was even more profound. For both specialist teams and in both FMCG settings, the opportunity to report directly to the Board of Directors appeared to improve performance, with levels of loss significantly lower for those that were able to do this. Whilst further research would be required to identify a clear causal link between having such functions and achieving lower levels of recorded shrinkage, this data does direct attention to the potential specialist teams may have to improve company performance and the need to give them access to senior decision-makers.

DISCUSSION

The purpose of this research was to better understand the extent, nature and control of shrinkage across the European 'Fast Moving Consumer Goods', FMCG sector. This required research along the supply chain process, from the point of production to the point of sale. This proved to be an ambitious objective given the complexity and scale of the sector (€824 billion), but was fundamental if genuine progress is to be made in reducing the impact shrinkage has on retailers and manufacturers alike. Of critical importance was understanding how different groups co-operated, or not on tackling this issue both internally and externally and whether the use of specialist teams had an impact on levels of loss.

Recognising the Need to Change

Measuring the cost of shrinkage was an important part of this project since for the most part those working in the sector have largely ignored the problem. The cost of shrinkage is enormous, with an annual price tag of €18 billion, excluding expenditure on trying to respond to the problem. This is equivalent to €50 million a day and accounts for 2.31% of market turnover. In addition, significant losses were found to occur at each point in the supply chain process, although retail stores were the place where nearly two-thirds of all shrinkage took place. In many respects this is not surprising – it is the point at which 'customers' enter the stock loss equation; mainly to browse and buy, but potentially also to steal, eat and damage stock. It is also the point at which perishable goods usually meet their 'sell by dates'; at best triggering price reductions, and at worse causing stock to be destroyed. But other stages in the 'chain' are responsible for significant losses as well and critically affect the efficiency and effectiveness of the sector.

Deciding how stock is lost is a perennial question for those trying to manage and monitor shrinkage – is it the staff, the customers, the suppliers or simply a consequence of company processes? Because most retailers do not know where and how the majority of their stock loss occurs, answering this question accurately remains impossible. Certainly theft is bound to be more of a problem for retailers than manufacturers due to the nature of their business, but there is a danger that too much emphasis is placed on a single explanatory factor when all companies are vulnerable to a range of stock loss problems.

Measuring the Problem

The research found that most retailers cannot tell where or how most loss takes place; only 41% is known. Manufacturers claim to be slightly more knowledgeable, but even they can account for only 59% of their loss. Much of the shrinkage iceberg remains submerged, shrouded by poor company practices. Without good quality data that is up-to-date and timely, loss prevention strategies will always be based upon the shifting sands of hearsay, guess work and perception. The surveys found that reporting procedures varied considerably not only between manufacturers and retailers but also between the different types of stock loss. A significant proportion of respondents identified process failures as an area that was reasonably well recorded, but internal and external theft were not seen as a priority for computerised database systems, with most either not recording incidents at all or simply keeping a paper record. This was particularly the case for manufacturers.

This raises two points. First, ‘data reinforcement’ can take place whereby only those problems that are recorded are seen as a problem and hence little effort is then made to

record other data. In effect a problem becomes self-selecting and self-prioritising and a perpetual loop of justification is produced. Secondly, paper-based systems offer little more than an auditable record of events and are bereft of virtually any analytical capabilities. It is only through the use of computerised databases that trends can be identified and a more information-led strategic approach can be adopted to deal with all the elements that account for shrinkage.

The Use of Security and Audit Personnel

It was found that retailers and manufacturers with security and audit departments had significantly lower levels of shrinkage compared with those companies that did employ such specialist functions. For retailers this amounted to a difference of 26 per cent for those with a security department and 39 per cent lower for those with an audit department. In addition, having access to the higher levels of decision-making also seemed to improve the performance of these teams, with those able to report directly to the Board of Directors having more of an impact on stock loss. While further research is required to show clear causality, investing in teams designed to specifically address this problem would seem to be a good strategy, and giving them sufficient power through access to senior decision-makers even more so.

Lack of Collaboration

Shrinkage is a problem that transcends departmental and company boundaries, and it is something that requires genuine partnership and co-operation if it is to be managed efficiently and effectively. For many retailers stock loss is the exclusive responsibility of the security/loss prevention and audit department and for manufacturers, very often the logistics team. However, virtually all parts of an organisation can play a role in

reducing stock loss; from the buyers, IT department, the distribution management team, right through to the legal department and buildings planners. Indeed, the role of departments like security should be as much about co-ordinating inter-departmental efforts to reduce shrinkage as it is about provision of 'security solutions' such as installing CCTV or employing security guards. In addition, co-operation between companies operating within the supply chain is equally important. Without cross-company collaboration, any shrinkage solutions will be partial, piecemeal and problematic, and will not contribute to overall supply chain efficiency.

To date very little has been done to try and co-ordinate stock loss reduction efforts across the different aspects of the entire supply chain process. This research has shown that much more could be done both by retailers and manufacturers to collaborate on problems of shrinkage and to work together to seek common solutions to shared problems. There is plenty of evidence that points to a significant amount of commonality in problems suffered, particularly with respect to process failures. It is difficult to see the disadvantages of improving the scale and extent of links between those who produce and those who sell. But it is plain to see the possible impact of self-interest and a lack of sector-wide co-operation – a continuing bill for stock loss of €18 billion a year.

Accompanying Tables

Table 1 Cost of shrinkage

	Percentage stock loss	Value (€ billions)
Retailers	1.75	13.4
Manufacturers	0.56	4.6
Total	**2.31**	**18.0**

Table 2 Location of loss within the supply chain

	Percentage of loss	Value (€ billions)
Manufacturer Distribution Centre	26	4.6
Retail Distribution Centre	8	1.5
Retail Store	66	12.0
Total	**100**	**18.0**

Table 3 Per cent and value of stock loss that is known and unknown by retailers and manufacturers

	Retailers		Manufacturers		Both
Known	41	5.5	59	2.7	8.2
Unknown	59	7.9	41	1.9	9.8
Total	**100**	**13.4**	**100**	**4.6**	**18.0**

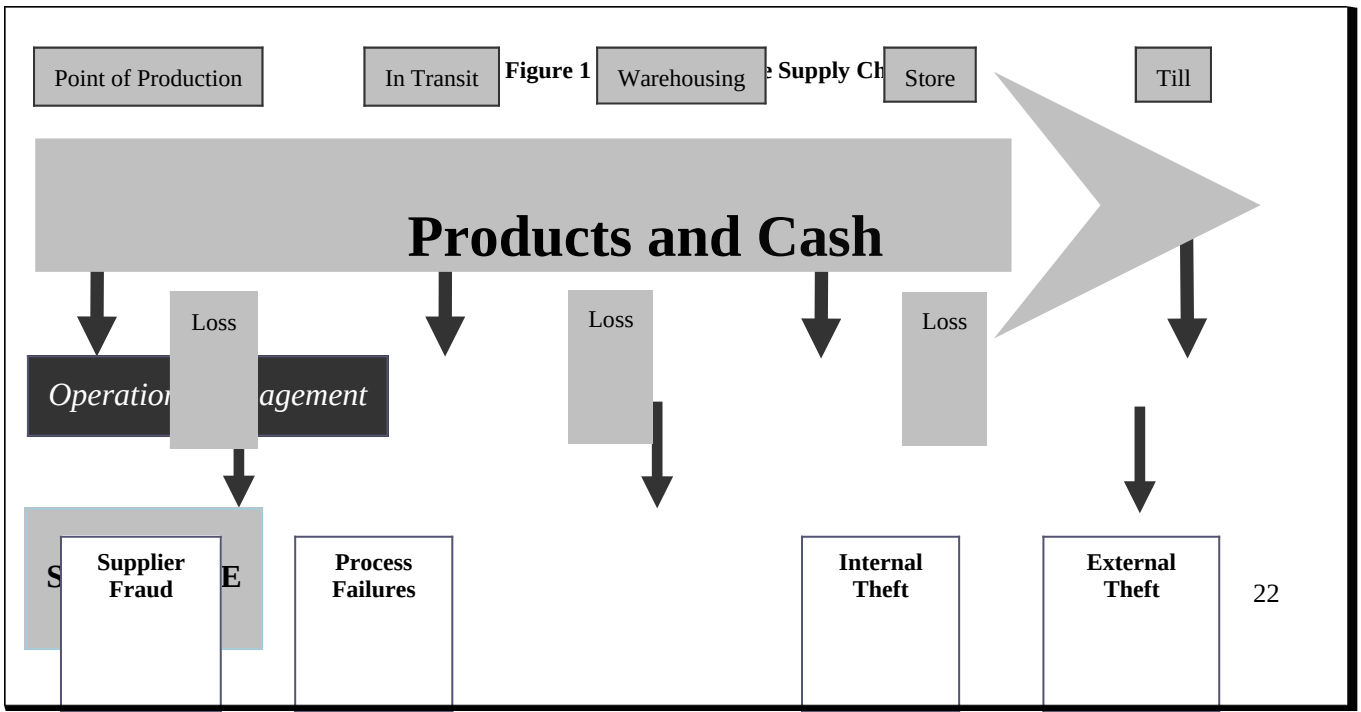


Figure 1 Supply Ch

Figure 2 Perceived causes of stock loss in the retail sector

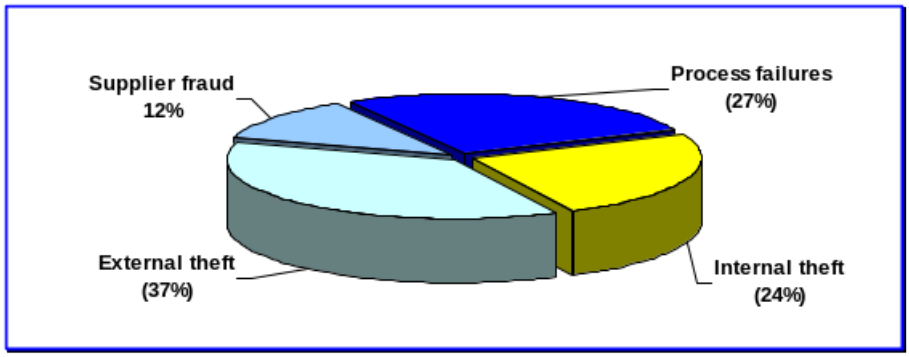


Figure 3 Perceived causes of stock loss in the manufacturing sector

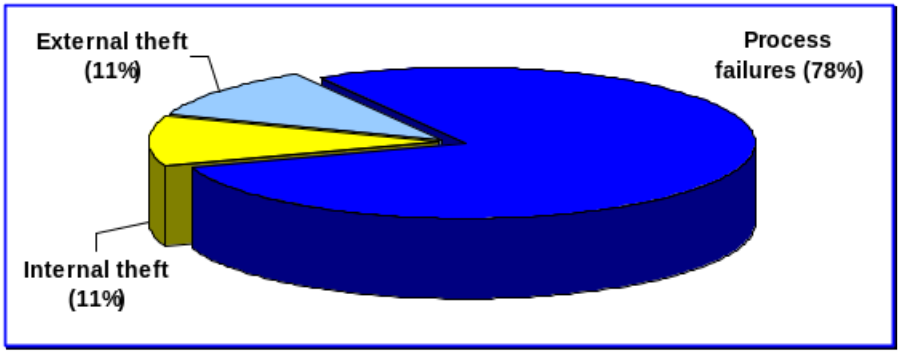


Figure 4 Extent of intra company co-operation for retailers

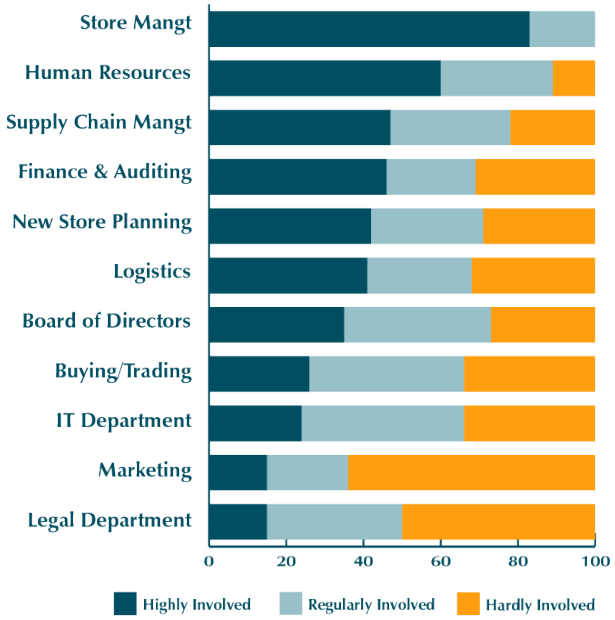


Figure 5 Extent of intra company co-operation for manufacturers

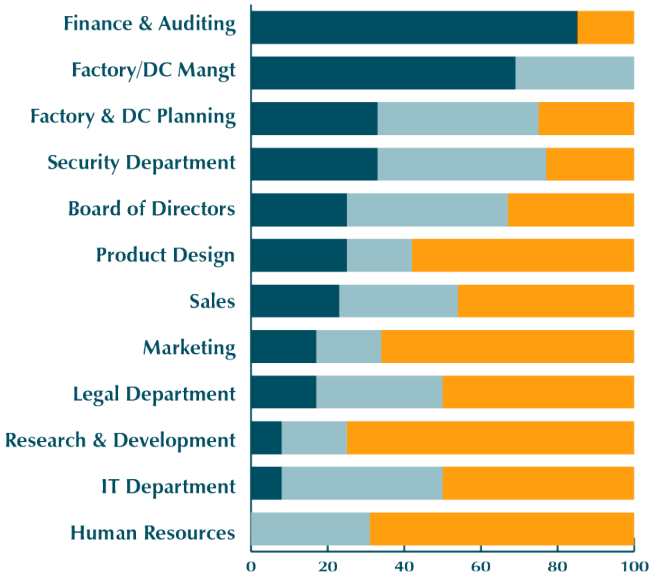


Table 4 Level of stock loss and use of a security/audit departments by retailers and manufacturers

Function	Retailer	Manufacturer
	Percentage of Stock Loss	
Security/Loss Prevention Department		
Yes	1.37	0.38
No	1.86	0.75
Report to Board of Directors		
Yes	1.27	0.04
No	1.47	0.64
Audit Department		
Yes	1.64	0.42
No	2.69	0.92
Report to Board of Directors		
Yes	1.59	0.39
No	2.10	0.52

Figures

Figure 4 Extent of intra company co-operation for retailers

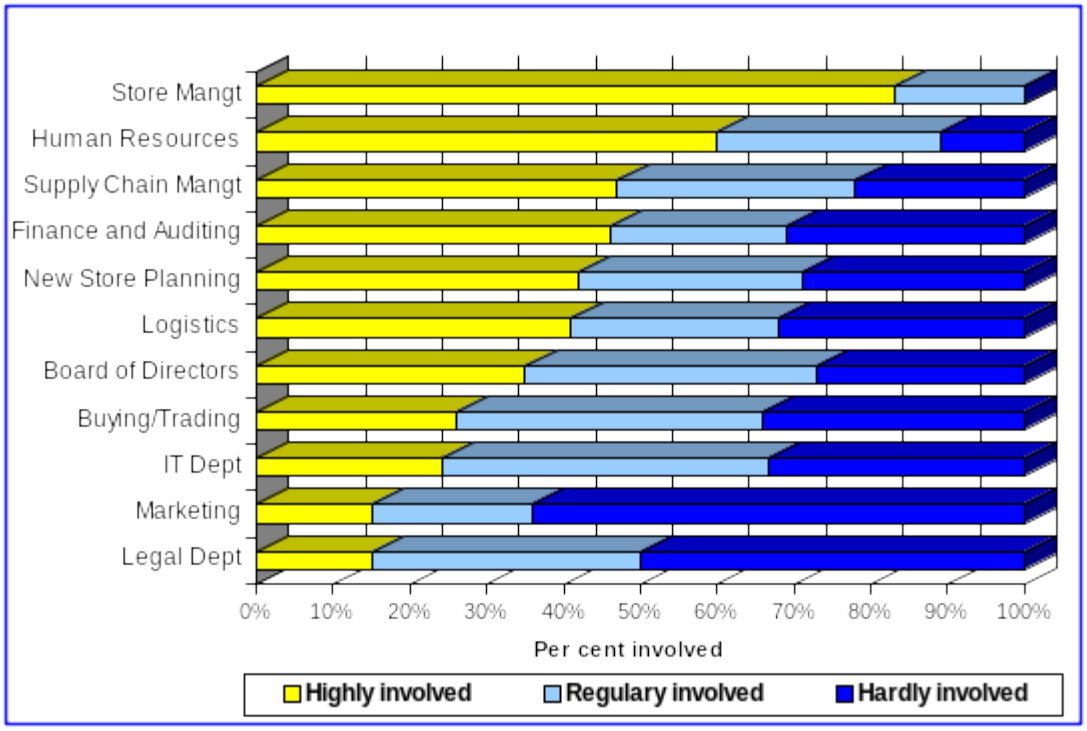
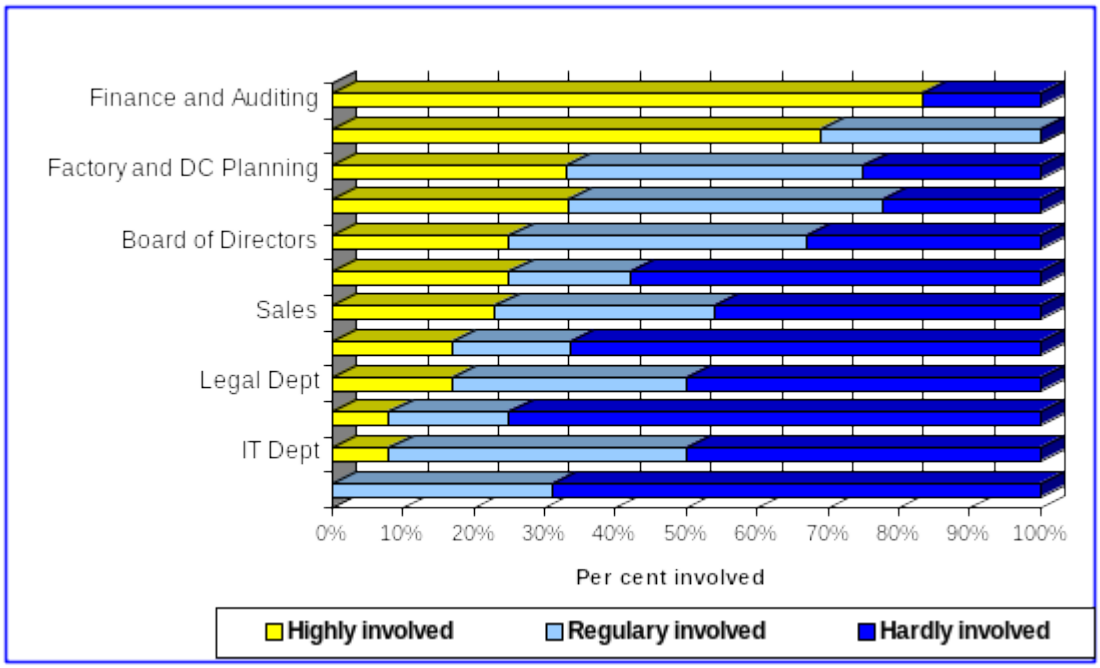


Figure 5 Extent of intra company co-operation for manufacturers



Notes

[5] See for example Masuda, B. (1992) 'Displacement vs Diffusion of Benefits and the Reduction of Inventory Losses in a Retail Environment', *Security Journal,* Vol. 3, No. 3, pp 131-136.

[6] This does not include wastage created by manufacturers as part of the normal production process.

[22] Evans, B.A. (1982) 'Preventing Internal Theft', *Retail Control*, Vol. 51, No. 1, pp 21-29; Roberts, C. (ed) (1985) *Harmonisation: Whys and Wherefores,* London: Institute of Personnel Management; and Harding, M. (1988) 'Staff You Can Trust', *Retail Week,* Issue 4, Vol. 1, p 10; Beck, A. and Willis, A. (1993) **'**Employee Theft: A Profile of Staff Dishonesty in the Retail Sector', *Journal of Asset Protection & Financial Crime*, Vol. 1, May, pp 45-57.

[23] See for instance Berlin, P.D. (1981) 'Preventing Refund Abuse and Fraud', *Retail Control,* Vol. 49, No. 3, pp 34-50; Allan, R. and Fforde, W. (1986) *The Auditor and Fraud,* London: Consultative Council for the Accountancy Bodies.

[24] Work has been carried out on the importance of security and loss prevention teams being involved in store and packaging design, see Erol, R. (2000) *Designing out crime: raising awareness of crime reduction in the design industry*, paper presented at the British Society of Criminology Conference, Leicester, 1-7 July; University of Cambridge, Sheffield Hallam University and The University of Salford (2000) *Design Against Crime: A Report to the Design Council, The Home Office and the DTI*, unpublished.

[25] For instance, there has been a considerable amount of work in the US and UK on operationalising civil recovery initiatives, see Bamfield, J. (1998) 'Retail Civil Recovery: Filling a Deficit in the Criminal Justice System?, *International Journal of Risk, Security and Crime Prevention*, Vol. 3, No. 4, pp 257-267.