



The integration of inherent risk and materiality assessments : an analysis of the major firms' practices

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**THE INTEGRATION OF INHERENT RISK
AND MATERIALITY ASSESSMENTS: AN
ANALYSIS OF THE MAJOR FIRMS' PRACTICES**

by

Nonna Martinov

*A project report submitted in partial fulfilment of the
requirements for the degree of Master of Commerce with
Honours to the University of New South Wales*

1995

CERTIFICATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of the university or other institute of higher learning except where due acknowledgment is made in the text.

Nonna Martinov

1995

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ABSTRACT

During the course of an audit engagement, an auditor makes numerous judgments concerning various aspects of the audit process. This study focuses on the judgments made in relation to the inherent risk and planning materiality assessments and the relationship and integration of these assessments. Both of these assessments are an integral part of the audit planning process under the current 'audit risk model' and are required to be made by the professional pronouncements.

The analysis of the audit manuals, other relevant decision aids, and interviews with the technical partner or manager from each of the 'Big 6' accounting firms in Australia provided the source of data for this analysis. The findings indicate a diversity in firms' approaches to adopting the overall risk model framework, the inherent risk and control risk concepts and the levels at which these are assessed. Similarly, although all the firms set an overall planning materiality, diversity exists in relation to the level of guidance and judgment involved, the actual guidelines used, the utilization of additional materiality levels such as an account level materiality. The firms' practices of integrating materiality and inherent risk are also diverse and the linkage is generally implicit rather than explicit. These findings are significant in terms of the interpretation and the setting of auditing standards given the diversity of practice which may result in different audit strategies.

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CHAPTER 1

Introduction

1.1 Background

During the course of an audit engagement, an auditor makes numerous decisions and judgments concerning many aspects of the audit process, including audit risk and materiality assessments. Since the issuance of Auditing Practice Statement 27: Materiality and Audit Risk (AUP 27), in 1988, which advances the now widely adopted 'audit risk model', judgments concerning the explicit assessment of both audit risk and materiality have become an integral part of the audit planning process.

Materiality is an expression of the relative significance or importance of a particular matter in the context of financial statements as a whole. It is both an accounting and an auditing concept which affects auditors' decisions at the planning, execution, and the evaluation stages of an audit.

Similarly, the concept of audit risk impacts upon auditors' decisions throughout the audit process. AUP27 identifies audit risk as a combination of inherent risk, control risk and detection risk. While both the audit pronouncements and audit practice have long recognised the importance of evaluating internal controls and the effectiveness of audit procedures, which equate to control risk and detection risk respectively, the assessment of inherent risk is relatively recent and is the specific risk component addressed by the current study.

AUP27 also recognizes and prescribes the nature of the relationship between materiality and audit risk, suggesting that the relationship is an inverse one. However little guidance is provided in AUP27 or in any other professional pronouncement as to how these assessments of materiality and the inherent risk component of audit risk might actually be made and integrated in practice. Thus, accounting firms and individual

auditors are largely left to their own devices as to how to arrive at such assessments and how to address the relationship between these assessments.

The current study is exploratory in nature and aims to investigate approaches currently employed by the major auditing firms in assessing inherent risk and materiality at the planning stage of an audit. It also aims to determine whether, and how the relationship and the integration of these assessments is addressed in the audit decision making process, and if in fact the professional requirements in relation to risk and materiality embodied in AUP 27 are adhered to.

1.2 Motivation

Mautz and Sharaf (1961) attempted to provide a conceptual framework for auditing. This framework continues to be relevant and is reflected in the present Statement of Auditing Standards (AUS1) and Audit Practice Statements (AUPs). While this research is looking at a different environment to that which existed at the time of Mautz and Sharaf's writings, the philosophy remains unchanged and is embodied in today's risk based methodology, which has been adopted by 'Big 6' auditing firms in Australia in the late 1980s.

The concepts and principles with regard to this methodology have been incorporated by the standard setters in the AUPs. The assessments of audit risk, inclusive of its individual components (i.e., inherent risk, control risk, detection risks), and materiality are critical to the application of this approach and are judgments required of auditors specifically by AUP27 and AUP10. Materiality (or precision) refers to a magnitude of a given misstatement, while degree of risk (or assurance) refers to the confidence that such a material misstatement is not present in the audited financial statements. The relationship between these two concepts is an inverse one as specified in AUP 27. It should be noted that the level of assurance can be only expressed in terms of a reference to materiality.

This study is motivated by a number of factors. Firstly, and from the perspective of this study most importantly, the relationship between inherent risk and materiality and the consequence of their assessment on the nature, timing and extent of audit work undertaken within the context of the audit risk methodology is critical. There is anecdotal evidence to suggest that in practice this relationship is poorly understood.

Secondly, the assessments and integration of these concepts are required in order to comply with AUS1 and the AUPs. Given the relative lack of guidance in the professional standards for the assessment of these critical elements, it is considered of importance to gain an understanding as to how these assessments are made and how compliance with the auditing pronouncements is achieved.

Thirdly, the potential for litigation in the absence of proof of these assessments being made or in the case of an inappropriate assessment will no doubt become an important issue when the current professional auditing pronouncements become codified and gain mandatory status (a process which is currently being pursued by the professional bodies). Consequently, for the profession to be able to prevent or minimise this type of potential litigation, it is essential that there is an understanding of how these assessments are made and integrated in practice and an agreement as to what is an accepted practice constituting compliance under the professional standards.

Fourthly, given the the integral role of materiality and risk in relation to accounting and auditing standards, the audit process and the audit report, it might perhaps be sooner rather than later, that the users will start questioning and demanding the quantification and explanation of these concepts. Already there is speculation in the USA that the numeric value of materiality will need to be disclosed in the audit report. It is considered that the profession will not perhaps be in a position to fulfil these demands unless an understanding of these concepts is clarified, including how they are dealt with in practice.

Finally, the study is motivated by a lack of research in relation to the assessment and the integration of the two concepts despite the prescribed nature of their relationship in AUP27 and equivalent professional pronouncements overseas. As discussed in Chapter 3 only four studies dealing specifically with materiality at the planning stage have been identified in the research to date (Moriarty and Barron (1979), Mayper (1982), Steinbart (1987) and Pany and Wheeler (1989)). These studies do not explicitly address the relationship between materiality and audit/inherent risk but their findings indicate an existence of a potential relationship. The research on inherent risk is relatively recent. The literature reviewed in Chapter 3 identified only four studies which address the impact of inherent risk on other judgments (Mock and Wright (1993), Wright (1992), Monroe and Therry (1993), Whittington and Margheim (1993)). None of these studies address the judgment of planning materiality. The present study is an attempt to partially fill the gap in the research to date and to provide an insight as to how the audit technology in practice deals with the assessment and integration of inherent risk and materiality.

1.3 Aims of Research

The main purpose of the present study is to contribute towards a better understanding of materiality and inherent risk assessments, their integration and their relationship during the planning stage of an audit. As already stated these are key assessments under the audit risk methodology and are prescribed by the professional pronouncements. Despite the recognition of the crucial role of these concepts there is little guidance provided as to how these assessments, might be actually made and integrated in practice, thus leaving it up to the individual auditors as to how they arrive at such assessments and how to integrate them.

The study is exploratory in nature and aims to provide insights in relation to these assessments by identifying approaches currently employed by the major auditing firms in assessing and integrating inherent risk (a component of audit risk as discussed in

Chapter 2) and materiality during the planning stage of the audit. This examination of the 'state-of-the-art' of the current audit methodology utilized by the large accounting firms is expected to identify innovative approaches and diversity of practice in complying with the prescribed professional pronouncements. Further, the identification of unresolved issues or application problems might suggest important areas for future academic research, potential areas in need of consideration by auditing firms in terms of their audit specific methodologies and formal training, as well as issues to be considered within the formal standard and professional guidance setting context.

1.4 Structure of the Research

This research project is divided into the following five chapters. Chapter 2 contains a detailed analysis of the materiality and inherent risk assessments in the context of the audit process. Chapter 3 overviews the relevant literature relating to materiality and inherent risk. Chapter 4 outlines the research method, the development of the research questions and the expected results. The results are presented, along with other issues arising from the research in Chapter 5. Chapter 6 summarizes the major findings, discusses the limitations of the research and considers implications for future research and practice.

CHAPTER 2

Materiality and Inherent Risk in the Context of the Audit Process

2.1 Introduction

AUP 27 defines and describes the concepts of materiality and audit risk, their interrelationship and the application of these concepts during an audit. AUP 27 is in accordance with the International Auditing Guideline 25: Materiality and Audit Risk (IAG 25) and is similar to standards adopted in the US, UK, Canada and New Zealand.¹

2.2 Materiality

Statement of Auditing Standards AUS1 (para 12) introduces the concept of materiality as follows:-

“In forming an opinion on the financial information, auditors perform procedures designed to obtain reasonable assurance that the financial information is properly stated in all material respects.”

AUP 27 (para 5) defines materiality as:-

“the extent of a misstatement (including an omission or non-disclosure) of relevant and reliable financial information either individually or in the aggregate that, in the light of surrounding circumstances, makes it probable that the judgement of the users of that information would have been influenced by the misstatement when making an evaluating decision on the allocation of scarce resources.”

¹ International Federation of Accountants: IAG25 (1987); ‘Materiality and Audit Risk’
American Institute of Certified Public Accountants: SAS47 (1983); ‘Audit Risk and Materiality in Conducting an Audit’
Canadian Institute of Chartered Accountants: AR5130 (1988); ‘Materiality and Audit Risk in Conducting an Audit’
New Zealand Society of Accountants: AG14 (1987); ‘Materiality and Audit Risk’
The Institute of Chartered Accountants in England and Wales: Exposure Drafts 220 (1993); ‘Audit Materiality’ and 300 (1993) ‘Audit Risk Assessment’.

It goes on to discuss that materiality should be considered by the auditor when,

- planning the nature, timing and extent of audit procedures;
- performing audit procedures;
- evaluating the effect of misstatements on the measurement and classification of accounts; and
- determining the appropriateness of the presentation and relevant disclosure in the financial information.

The assessment of what is material is a matter of auditors' professional judgement that is influenced by auditors' perceptions as to who are likely to be the users of the financial statements and their needs. The auditor needs to take into consideration both the amount and the nature of any misstatements as well as the relevant legal and regulatory requirements. Auditors consider materiality at both an overall financial statement (macro) level and at a specific (micro) level in relation to account balances and disclosures. These guidelines are provided in AUP 27 (para 20) which states that:-

“When planning an audit, auditors should consider what factors could generate material misstatement in the financial information. Auditors' preliminary judgement of materiality should consider materiality at both the overall level and in relation to specific account balances and class of transactions.....”

2.3 Audit Risk and Inherent Risk

AUP 27 (para.10) defines audit risk as “the risk that auditors may express an inappropriate opinion on financial information that is materially misstated”.

AUP 27 also prescribes the levels at which audit risk needs to be considered. The levels of consideration are identical to those of materiality assessment, i.e., at the financial statement level and at the account and class of transactions level.

AUP 27 (para 11) discusses the assessment of audit risk at the overall financial statement level as follows:-

“Audit risk is considered at the financial statement level during the audit planning process. At this time, auditors should undertake an overall audit risk assessment based on their knowledge of an entity’s business, industry, management, control environment and operations. Such an assessment provides preliminary information about the general approach to an engagement, auditors’ staffing needs and the framework within which materiality and audit risk assessments can be made at the individual account balance or class of transactions level”.

The consideration of audit risk at a more detailed level is discussed in AUP 27 (para 12). It states that:-

“The majority of audit procedures are directed to, and carried out at, the account balance and class of transactions level. Accordingly, audit risk should be considered by auditors at this level taking into account the results of the overall audit assessment made at the financial statement level”.

The audit practice statement then goes on to describe and define the three individual risk components of audit risk and the interrelationship of these components in paragraphs 14 to 17. These risk components are:-

- Inherent risk (IR): risk that material errors will occur;
- Control risk (CR): risk that an entity’s system of internal control will not prevent or correct such errors, and
- Detection risk (DR): risk that any remaining material errors will not be detected by the auditor.

The general relationship between the risk components is defined in AUP24, “Audit Sampling”, Appendix IV where the model is expressed as follows:

$$\text{Audit Risk (AR)} = \text{IR} \times \text{CR} \times \text{DR}$$

The current study addresses the IR component of AR. Given the relationship between IR and AR, it follows, that the assessment of IR within the context of the guidelines in

AUP 27 (paras 11-12) also needs to be addressed at the overall financial statement level and the more detailed individual account level. This requirement is also set out in Appendix to AUP12.

2.4 Relationship between Materiality and Inherent Risk

Materiality and AR, including the IR component, are both assessed during the audit planning stage for the purpose of determining the nature, timing and extent of audit tests. The need to obtain sufficient and appropriate audit evidence is a key element of an audit and is required by Australian, US, UK, Canadian and New Zealand auditing standards and pronouncements.

Under these guidelines the process of determining the amount and the nature of evidence necessary is influenced by the following three factors:

- (i) The required precision of the audit opinion which is in turn determined by the level of materiality.
- (ii) The required degree of assurance of the audit opinion, or the risk of undetected misstatements remaining in the audited financial statements. This risk is a function of IR, CR and DR.
- (iii) The availability of audit evidence.

The relationship between materiality and risk is prescribed in AUP27 (para 19) as follows:-

“There is an inverse relationship between the acceptable materiality level and the level of audit risk. Auditors must take this relationship into account when determining the nature, timing and extent of audit procedures”.

Given the relationship between AR and IR discussed in Section 2.3, it follows that the inverse relationship prescribed in AUP27 (para 19) also applies to IR and materiality.

As discussed so far AUP27 provides guidelines in relation to the following issues, namely

- Both materiality and AR, including the IR component, need to be evaluated at the overall financial statement level and at an individual account level or a class of transactions level; and
- The relationship between materiality and AR, inclusive of the IR component, is an inverse one.

However, the statement does not specifically address the process of the evaluation of either of the concepts or of relating them beyond the general statements outlined above. The relationship between the overall financial statement evaluation of both materiality and risk and at a more detailed level of an account balance or a transaction level is also not addressed in specific detail.

The model developed in Figure 1 relies on the descriptions and definitions included in AUP27 and AUP24 and is an attempt at integrating the AR model with materiality at the overall financial statement level and at an individual account/transaction level.

The model assumes (based on the definitions) that the overall level of planning materiality and AR including its individual components of IR, CR, DR is a framework within which risk and materiality of individual accounts/classes of transactions are initially evaluated (i.e., AR/IR and materiality at the detail level are a function of the overall materiality and risk level). It is also assumed that the materiality utilized in forming the final audit opinion is a function of the planning materiality.

Furthermore, given that the level of IR and CR is a function of a client and independent of the audit function, it is considered that in practice the level of these risks needs to be

evaluated prior to the finalization of the planning materiality and setting of DR to ensure that the achieved level of AR is kept within acceptably low limits.

The relationship between risk and materiality during the planning stage of the audit is further broken down in Figure 2.

2.5 Level of Materiality and Inherent Risk Addressed in the Current study

The study concentrates primarily on identifying the approaches to the assessment of IR and planning materiality at the overall financial statement level and how the relationship between these assessments is addressed in practice.

The financial statement level rather than an individual account or class of transaction level was chosen as the primary focus of this study for two reasons. Firstly, the consideration by an auditor of both risk and materiality at the financial statement level before proceeding to the more detailed level is implicit within the guidelines included in AUP 27 and as shown in Figures 1 and 2. Secondly, the audit opinion is given primarily on the financial statements as a whole and as such the key audit judgments, (i.e., acceptance/continuance of the audit engagement and the type of audit opinion issued), are made within the context of the financial statements as a whole.

FIGURE 1

ANALYSIS OF AUP 27

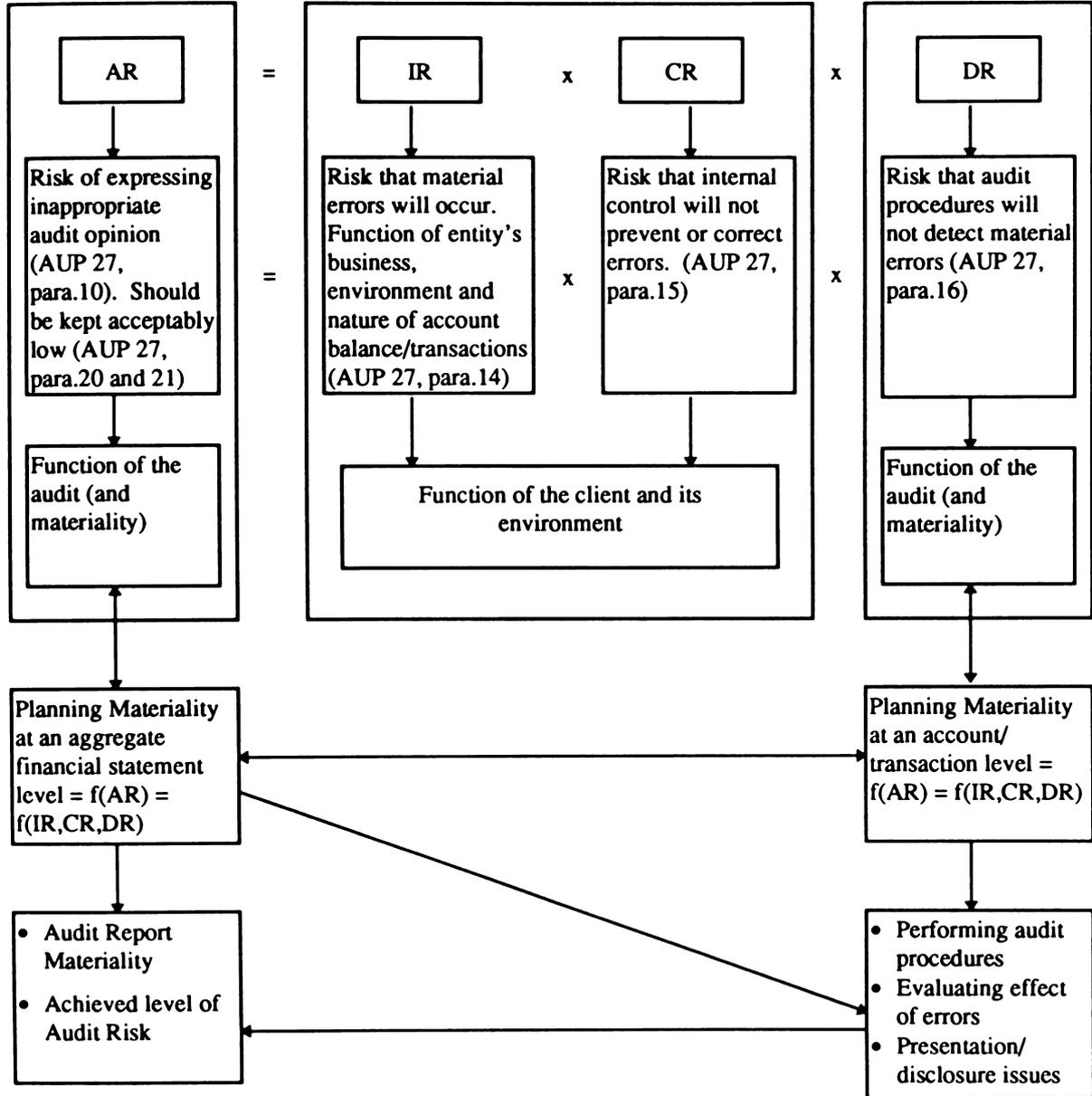
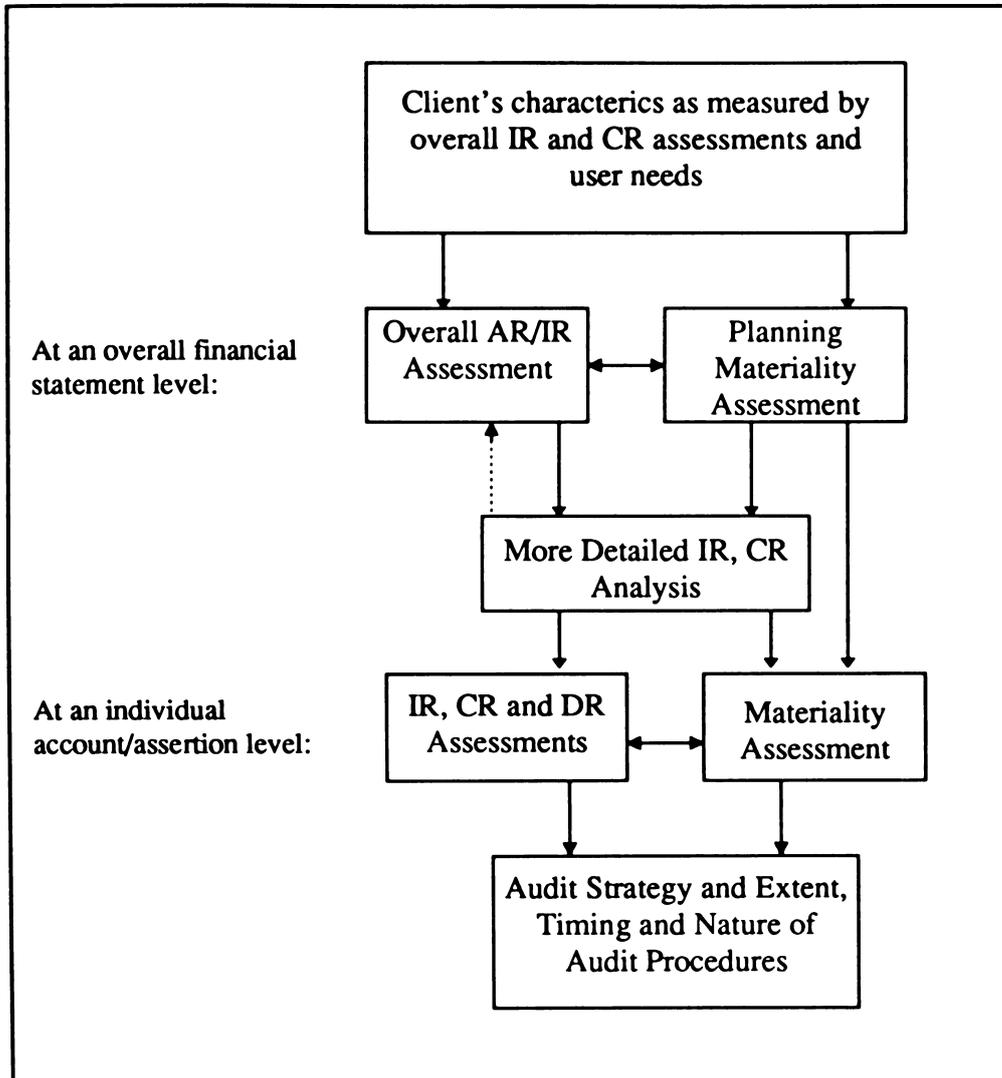


FIGURE 2

**RELATIONSHIP BETWEEN RISK
AND MATERIALITY**



CHAPTER 3

Literature Review

3.1 Introduction

The following provides a review of empirical audit research literature dealing with materiality (Section 3.2) and IR (Section 3.3). Section 3.4 addresses literature linking the two concepts together. A summary and a discussion of the research concludes this chapter in Section 3.5.

3.2 Literature Addressing Materiality

3.2.1 *Materiality as a Concept*

Materiality is a key concept in the theory and practice of accounting and auditing. The importance of this issue is perhaps best summarised by an extract from the Financial Accounting Standards Board (FASB) Discussion Memorandum which states that:-

“The concept of materiality pervades the financial accounting and reporting process. It influences decisions regarding the collection, classification, measurement and summarization of data concerning the results of an enterprise's economic activities. It also bears on decisions concerning the presentation of that data and the related disclosures in financial statements. As applied by preparers and auditors, the concept of materiality is generally understood ultimately to involve determination of the importance of a matter for financial reporting purposes.” (1975, p. 3)

In Australia AUS1 (para 12) introduces the concept of materiality as follows:-

“In forming an opinion on the financial information, auditors perform procedures designed to obtain reasonable assurance that the financial information is properly stated in all material respects.”

Materiality is considered by the auditor throughout the audit process. The focus of the present study is on materiality during the planning stage of the audit as distinct from the evaluation of the results stage and the general reporting materiality as outlined in Australian Accounting Standard 5: Materiality in Financial Statements (AAS 5).

The assessment of what is material is a matter of an auditor's professional judgment and is considered at both an overall level and in relation to individual account balances and disclosures. The auditor needs to take into consideration both the amount and nature of any misstatements detected as well as any legal and regulatory requirements.

(i) Time Frame

The empirical research on materiality for the period to 1982 was considered to have been adequately summarized and reviewed by Holstrum and Messier (1982). Consequently, the literature search for the purposes of the current study has concentrated on the period from 1982 to the present. There has been a considerable amount of empirical research over the last four decades which has addressed a number of different aspects of the materiality concept. The most prolific period of research was in mid to late 1970's when the interest in the subject was intensified by the FASB's decision in 1975, to examine this issue. Relatively little research on the subject matter was published in the early to mid 1980's with a renewed interest in this area appearing in the late 1980's. It is most likely that the renewal of interest was due to the adoption of the risk audit methodology in the 1980's and the key role of materiality in this conceptual framework.

(ii) Classification Framework

A comprehensive review of empirical research on materiality, as noted above, was compiled by Holstrum and Messier in 1982. Their analysis was categorized according to three research methods, namely archival, questionnaire surveys and judgment - capture experiments. The majority of the studies fell into the first and the last categories (Refer Appendix B). Given the classification of these earlier studies, a similar framework by major research method was adopted for the purpose of this literature review. The categorization applied here and shown in Table 3.1 is by two major categories. The first category, which is by far predominant in terms of quantity of research, deals with 'laboratory studies' and generally equates to Holstrum and Messier's judgment - capture experiments. The 'other category' includes all other types of studies and equates to Holstrum and Messier's archival and questionnaire survey categories. The majority of the studies in this category are archival in nature.

3.2.2 Summary of Research Findings

(i) Research to 1982

Holstrum and Messier (1982) reviewed empirical research literature dealing with materiality up to 1982 (Refer Appendix B). They summarized the research findings under four areas as follows:

The Nature of the Item. They comment that it is difficult to integrate the results of the studies due to the diversity of items examined (eg Bernstein (1967)-extraordinary items; Neuman (1968)-change in depreciation and tax method; Frishkoff (1970)-qualified audit reports; Moriarity and Barron (1976)-change in useful life of equipment; etc). There is some indication that the nature of the item is an important determinant of materiality. The only study that explicitly investigated and manipulated the nature of the item, Boatman and Robertson (1974), reported that this factor was significant. However, given the wide range of items across the studies it is difficult to generalise the results because the relative importance of each of these items may vary significantly.

The Structural Form of the Decision Model. The results of most of the judgment capture experiments (eg. Emery et.al., (1981); Moriarty and Barron, (1976)) indicate an additive (linear) model as an approximation for modelling materiality judgments.

Relative Importance of Factors. The studies found that the percentage effect of the item on income was the single most important quantitative factor (Boatsman and Robertson (1974); Dyer (1975); Emery et. al. (1981); Krogstand et.al. (1981); Firth (1979); Frishkoff (1970); Moriarity and Barron (1976); Pattillo (1976) and Woolsey (1985, 1973)). A distant second item in importance, explaining only a small amount of judgment variance was 'the effect on earnings trend' (Woolsey; Moriarity and Barron; Krogstad et.al.).

Results in relation to effect on total assets or net assets were mixed, with Firth, Moriarity and Barron and Emery et. al. finding limited support. In the remainder of the studies it was not statistically significant.

Materiality Thresholds. The studies revealed differences between users, preparers and auditors with respect to materiality thresholds. In general, user groups demonstrate lower materiality thresholds than do preparers or auditors (Pattillo (1976); Firth (1979)). Holstrum and Messier (1982) conclude that on average across all studies, the materiality thresholds of auditors tended to be between those of preparers and users, but the variance among auditors was significant.

Woolsey (1973) found that auditors from large national firms had higher materiality thresholds than auditors from small firms. Differences were also found among auditors from different large firms (Firth, (1979)) and even among the auditors within the same firm (Moriarity and Barron, (1979)).

In addition to the above it should also be noted that the results of a number of studies indicated that auditors' attitudes towards risk may affect their materiality judgment (Boatsman and Robertson, (1974); Newton, (1977)). It is of interest to note that the studies reviewed thus far all examined the materiality judgments at the audit evidence evaluation phase. The only study of planning-stage materiality judgments was done by Moriarity and Barron (1979). In summary, Holstrum and Messier (1982) concluded in that the results of research to date do not provide any 'definite comprehensive implications for audit practice or policy formulation.'

Finally, it should be noted that all of the studies summarized and discussed by Holstrum and Messier are not particularly current, dating from ten to more than twenty years ago. There have been numerous changes since their review in both the regulatory and professional environments as well as increased sophistication of research methodology and the statistical analysis.

(ii) Research from 1982

A summary of the studies considered relevant are shown in Table 3.1 and as stated prior are classified as either 'Laboratory Studies' or "Other Studies".

TABLE 3.1
SUMMARY OF LITERATURE REVIEW: MATERIALITY
(a): Laboratory Studies

AUTHOR	FOCUS	TYPE OF RESEARCH	FINDINGS
Mayper (1982)	The study examined the consensus of auditors' assessment of the <u>planning stage materiality</u> of internal accounting control weaknesses (IACWs).	Exploratory. (38 practicing auditors (seniors) evaluated materiality of 12 IACWs (2 x 3 x 2 factorial design) using both a paired comparison and a single rating procedure. The three independent variables manipulated were type of missing IAC, (lack of segregation of duties or formal authorization), type of asset affected (cash, dental supplies and dental equipment), and most likely dollar effect (high: 80 percent of total dollars flowing through the transaction area and low: 20 percent).	The results provide evidence that individual differences emerge both in the choice of factors used by auditors to rank materiality of IACWs and in their materiality thresholds.
Messier (1983)	The overall objective of the study was to analyse the various characteristics of materiality/disclosure judgments (ie <u>evaluative materiality</u>) of audit partners.	Exploratory. (29 audit partners were presented with 32 cases (4x2 ⁴ x 0.5 fractional factorial design) and asked to make two judgments with respect to a \$1,000,000 inventory writedown: 1. the materiality of the writedown and (2) the probability of separate disclosure in P&L statement. The net income was varied over four levels, while earnings trend, total assets, total inventories and current ratios took on only two values).	The results indicate that net income was significant for virtually all partners (27 of 29), earnings trend was significant for approximately half of the subjects. Judgment consensus, insight and judgment stability were relatively high.

TABLE 3.1
SUMMARY OF LITERATURE REVIEW: MATERIALITY
(a): Laboratory Studies (Cont'd)

AUTHOR	FOCUS	TYPE OF RESEARCH	FINDINGS
Jennings, Kneer and Reckers (1987)	To assess the consistency with which practicing auditors operationally define <u>evaluative stage materiality</u> as compared to various other groups (users: bank loan officers, financial analysts, credit managers, and officers of the court : judges and corporate attorneys).	Exploratory. (Four cases were developed to compare materiality choices of CPAs and officers of the court and between subjects experimental design was utilized. An additional fifth case was developed to compare CPA's and users' judgments and within subjects design was adopted. Each case involved financial disclosure issue (write-off of obsolete inventory, a gain on the sale of property, a lawsuit, bribe and discontinued product line) and subjects were asked to determine the dollar threshold at which the error or non-disclosure of an item would become material).	The findings suggest that: (1) significantly different views of materiality exist across different cases, and (2) great variation exists in all respondent groups in operationalizing materiality, within as well as across cases.
Mayper, Doucet and Warren (1989)	Refer to Mayper (1982) above. The experiment and results were reanalyzed using more sophisticated statistical methods.	Exploratory/Descriptive (Refer Mayper (1982) above).	The results indicate that: (1) The auditor's models indicate a diversity in the importance attached to the independent variables (ie type of IAC, type of asset and likely dollars effect) affecting materiality judgments of IACWs. Both qualitative and quantitative factors are considered. (2) The independent variables manipulated in this study are, on average, important in explaining auditors' materiality judgments of IACWs. For the majority of auditors there is a significant interaction between the type of IACW and the type of asset. (3) Significant configural processing is suggested by the judgments of a majority of auditors.
Fisher (1990)	An initial study of the relevance of information on materiality levels to investor decisions	Exploratory. (Comparison of double oral auction markets (stock prices, trading volume and trader profit changes) when manipulating information availability about materiality levels:- ie no disclosure, private disclosure and public disclosure of the magnitude of materiality).	The results indicate that the disclosure of materiality does lead to greater market efficiency, but does not always enable insiders to earn abnormal profits.

TABLE 3.1
SUMMARY OF LITERATURE REVIEW: MATERIALITY
(a): Laboratory Studies (Cont'd)

AUTHOR	FOCUS	TYPE OF RESEARCH	FINDINGS
Carpenter and Dirsmith (1992)	The study examines hypothesized relationships between materiality judgments (ie <u>evaluative materiality</u>) and the size and nature of early debt extinguishment transactions, client earnings trend and experience of their auditor.	Exploratory/Descriptive. (212 subjects (partners, managers and seniors) participated. The test instrument contained 12 randomly assigned hypothetical cases (out of the 72 cases developed manipulating six variables). The subjects indicated how material they believed the gain from the transaction to be in each case as well as answering a number of related agree-disagree format questions).	The results show that: (1) The absolute dollar amount of the early debt extinguishment transaction, the size of the transaction relative to total assets, and in particular the size of the transaction relative to net income, as well as their interaction effects, all influenced the materiality judgments. (2) Participants considered transactions that reversed downward earnings trends to be more material than the transactions that did not. (3) The nature of the transaction plays an influential role in the formation of audit materiality judgment (ie in-substance defeasance encouraged auditors to exhibit stricter materiality standards than ordinary debt extinguishment and bond refunding). (4) Experienced auditors or auditors with task specific knowledge appear to subject audit materiality judgments relating to discretionary, non-routine transactions to closer scrutiny.
Pilote (1992)	The study investigates auditors' risk attitudes in a contingent liability context with respect to the materiality decision (ie <u>evaluative materiality</u>).	Investigative. (31 auditors (partners managers and seniors) from a Quebec Big Six firm had to estimate firstly the maximum amount of damages in the litigation that they considered immaterial in relation to income and secondly the minimum reduction of the lawsuit given the probability of occurrence of the unspecified reduced damages and the remaining chance of given maximum damages in order not to qualify the audit report).	According to the results the risk functions of auditors in the materiality audit context show an exponentially decreasing risk-seeking curvature. Partners were found to be more risk-seeking than managers, and managers more than seniors. Partners display risk attitudes which are more homogenous than those of managers and seniors. However, auditors' risk attitudes appear to have no effect on their materiality level determination.
Carpenter, Dirsmith and Gupta (1994)	The study focuses on understanding how auditors form specific types of (<u>evaluative</u>) materiality judgments as a social process influenced by their firms' cultures.	Interpretive study using experimental simulation involving the participation of 212 partners, managers and seniors from former Big 8 firms making materiality judgments for hypothetical cases (questionnaire) in relation to gain arising from debt extinguishment transactions.	The results suggest that audit firm culture (organic, intermediate, mechanistic) and experience (partner, manager, senior) influence the materiality judgment procedures.

TABLE 3.1
SUMMARY OF LITERATURE REVIEW: MATERIALITY
(b): Other Studies

AUTHOR	FOCUS	TYPE OF RESEARCH	FINDINGS
Robinson & Fertuck (1985)	The study attempts to identify the factors which determine auditor <u>evaluative materiality</u> judgments.	Exploratory. (Data from audit files on the actual materiality decisions (610) made for 61 companies that were the prime responsibility of 15 different partners in 3 audit firms).	The results show that the effect of the errors on net income is significant in decisions, but it is not the only relevant factor. Objective errors are more likely to be material, as are errors in companies where client opposes corrections. Errors are less likely to be declared material in high debt-ratio companies.
Steinbart (1987)	The study is an attempt to construct a rules-based expert system as a means of conducting descriptive research on <u>planning stage materiality</u> judgments. (ie learning more about how the judgments are made).	Descriptive/Investigative. (Audit manuals, interviews with a number of firms, a number of interactive session with one audit partner and responses of six auditors at the testing stage).	The planning stage materiality judgments were seen to involve two separate sub-decisions: (1) The choice of an appropriate base for calculating materiality. The choice was shown to depend on the perceived needs of the financial users, the nature (ie financial characteristics, industry classification, type of entity) of the client and plans of the client for future financing. (2) The selection of a percentage rate to multiply by the base. The choice of a percentage rate was found to depend on the intended use of the client's financial statements and prior experiences with the client.
Morris and Nichols (1988)	The study examined the relationship between publicly available information and auditor <u>evaluation stage materiality judgments</u> regarding interest - capitalization consistency opinions.	Exploratory. (The annual reports for 1979, 1980 and 1981 publicly listed companies audited by Big Eight Firms).	The results suggest that: (1) The nine publicly available information measures (eg. interest capitalized over net incomes; debt to equity; net income over equity; and income trend between years) explain a significant portion of the variability in auditor materiality judgments. (2) Significant differences in judgment consensus were found between the firms; and (3) A significant positive correlation between judgment consensus and audit firm structure appears to exist (ie materiality decisions of structured firms were modelled more successfully, implying more consensus).

TABLE 3.1
SUMMARY OF LITERATURE REVIEW: MATERIALITY
(b): Other Studies (Cont'd)

AUTHOR	FOCUS	TYPE OF RESEARCH	FINDINGS
Chewning, Pany and Wheeler (1989)	To provide evidence on how auditors interpret the materiality concept (at the <u>evaluation stage</u>) by determining when the effect of a change in accounting principles results in a modification of the audit report.	Exploratory. (Analysis of annual reports and audit opinions of public companies that have changed accounting principles in the period 1980 to 1983).	The results confirmed previous research findings that the income effect of an accounting change is the primary factor in making accounting change modification judgments. The results are also consistent with the view that the type of change affects auditor's decision. The discretionary change (LIFO adoption) resulted in a significantly higher percentage of modified opinions than did the non-discretionary changes (foreign currency and sick leave/holiday pay accrual). The findings also indicate that Non-Big Eight partners have lower materiality thresholds than their Big Eight counterparts.
Pany and Wheeler (1989)	A summary of a number of rules of thumb, suggested as <u>planning materiality</u> calculations, and estimation and comparison of the magnitudes and variability's that result from their use.	Exploratory. (Calculation of materiality levels using (10) different rules of thumb for 330 companies representing 25 diverse industries for the years 1977 to 1986).	The comparison within and between industries of the relative levels of calculated materiality amounts, determined by using the different rules of thumb, show that sizeable differences can occur depending upon the method and the industry.
Icerman and Hillison (1991)	The study provides evidence on <u>evaluative materiality judgments</u> made during the audits of 49 manufacturing companies over three years.	Exploratory/Descriptive. (Analysis of errors identified in the working papers of seven Big-Eight CPA firms).	Evaluative materiality judgments, as reflected in the decision to either book or waive the detailed errors, were modelled as a function of relative error size and audit-firm structure. The modelling results suggest that the decision to book or waive is a function of the relative size of error and audit firm structure. Firms with structured audit approaches tend to book a greater proportion of individual errors than do the less structured firms.

The research findings from 1982 are summarized below using the same framework as utilized by Holstrum and Messier (1982) for the earlier research.

Nature of the Item. As with the earlier studies a wide range of items continues to be examined including internal controls and types of assets (Mayper, 1982 & 1989),

inventory writedown (Messier, 1983 and Jennings et.al., 1987), sale of property, bribe, discontinued product line (Jenning et. al., 1987), lawsuit contingency (Pilote, 1992 and Jennings et. al., 1987) capitalisation of interest (Morris and Nichols, 1988), debt extinguishment (Carpenter and Dirsmith, 1992), change in accounting policy (Chewning et.al., 1989) and treatment of errors (Icerman and Hillison, 1991). Given the diversity of the items it is again difficult to integrate and generalize the results of these studies. However, they do tend to indicate and support the findings of the earlier studies that there is some indication that the nature of the item is a significant determinant of materiality. Jennings et. al. (1982) found different views of materiality depending on the item considered (i.e., write-off of obsolete inventory, a gain on sale of property, bribe, a lawsuit and discontinued product line). Mayper et. al. (1989) also found a diversity in the importance attached to their independent variables (i.e., type of internal control and type of asset). Carpenter and Dirsmith's (1992) results indicate that the nature of the transaction plays an influential role in the formation of audit materiality judgments (i.e., in-substance defeasance encouraged auditors to exhibit stricter materiality standards than ordinary debt extinguishment and bond refunding). Chewning et. al.'s (1982) results are also consistent with the above findings, indicating that the type of accounting changes affects auditors decisions. The discretionary change (LIFO adoption) resulted in a significantly higher percentage of modified opinions than did the non-discretionary changes (foreign currency and employee entitlements). Robinson and Fertuck (1985) found that objective errors are more likely to be material, as are errors in companies where the client opposes the corrections.

The Structural Form of the Decision Model. Steinbart (1987) in an attempt to construct a 'rule-based' expert system for determining planning materiality concluded that the judgment involves two separate sub-decisions, being the choice of a base and the choice of a rate. Both choices were found to be dependent on a number of varying factors.

Mayper et. al. (1989) concluded from their results that significant configural processing is suggested by the judgments of a majority of auditors.

Relative Importance of Factors. As with the earlier studies, income continued to be a significant factor (Messier, 1983; Carpenter and Dirsmith, 1992; Robinson and Fertuck, 1985; Morris and Nichols, 1988; and Chewing et.al., 1989). Other factors found to be significant were earnings trend (Messier, 1983) and total assets (Carpenter and Dirsmith, 1992).

Materiality Thresholds. The studies continue to reveal differences between users and auditors (Jennings et.al., 1987) as well as between auditors. Carpenter and Dirsmith (1992) found that experienced auditors or auditors with task specific knowledge appear to subject audit materiality judgments relating to discretionary, non-routine transactions to closer scrutiny. Significant differences in judgment consensus were found between different Big Eight firms (Morris and Nichols, 1988) as well as indication that Non-Big Eight partners have lower materiality thresholds than their Big Eight counterparts (Chewing et.al., 1989). Morris and Nichols (1988) and Icerman and Hillison (1991) found audit firm structure to be a significant factor in the formation of materiality judgments.

It should be noted that contradictory to the earlier studies, Pilote (1992), found that auditors' risk attitudes appear to have no effect on their materiality level determination. Also, the majority of the studies have continued to address evaluative materiality judgments. The only studies that addressed planning stage materiality were Mayper (1982), Steinbart (1987) and Pany and Wheeler (1989).

3.3 Literature Addressing Inherent Risk

3.3.1 *Inherent Risk as a Concept*

The concept of IR is relatively new to the auditing standards. It is now recognized in Australia, New Zealand, U.S.A., U.K. and the Canadian auditing standards. The IR assessment/judgment forms part of the overall AR assessment ($AR = IR \times CR \times DR$). IR is defined in professional pronouncements (AUP27, AUP24, AUP12) as the susceptibility of an account balance or class of account balances to error that could be material assuming that there are no related internal controls. The level of IR, at both the financial statement level and the individual account balance level, should be assessed during audit planning by reviewing a variety of relevant factors. The purpose of the assessment is to assist in determining the nature, timing and extent of audit tests.

(i) *Time Frame*

Colbert (1987) and Daniel (1988) consider the issuance of Statements on Auditing Standards “AR and Materiality in Conducting an Audit” (SAS47, 1983), “Audit Sampling” (SAS39, 1981) and the 1980 Canadian Institute of Chartered Accountants (CICA) study on “Extent of Audit Testing” as the beginning of the profession's formalised understanding of AR. The SAS 39 AR model is fundamentally different to SAS 47 and the CICA study, since the former omitted the term IR, as this risk was set conservatively at one.

Given that the concept of there being different levels of IR was not clearly formalized until the early 1980's, the literature search concentrated on the period of the last ten years. The timeframe of the studies dealing explicitly with IR was found to be 1988 onwards, with the majority of the studies dating 1991 to 1994.

This is not unexpected as the first formal adoption of the risk model appears to have been by Ernst and Whinney in 1984. It was not until 1991 that the last of the major firms in Australia formalized the approach.

Two earlier studies (Gibbins & Wolf (1982) and Johnson (1987)) did not deal with IR explicitly, as this term was not specifically introduced into practice until late 1980's, but some of their findings can be retrospectively identified as relating to IR factors.

(ii) Classification Framework

From the review of the relevant literature it appears that the majority of the research falls into the audit judgment area and is descriptive/exploratory in nature. The same classification framework as in section 3.2 was adopted. However, unlike the research on materiality most of the IR studies are archival in nature or utilize questionnaires. Only a small number of studies fall into the laboratory studies category.

3.3.2 Summary of Research Findings

The relevant studies are summarized in the following tables 3.2 and are classified as either "Laboratory Studies" or "Other Studies".

TABLE 3.2
SUMMARY OF LITERATURE REVIEW: INHERENT RISK
(a): Laboratory Studies

AUTHOR	FOCUS	TYPE OF RESEARCH	FINDINGS
Colbert (1988)	The study represents an initial effort to gain a better understanding of how auditors assess IR.	Exploratory/Descriptive. (The study examined the judgments of IR concerning inventory made by practicing auditors (65) using four IR factors (turnover of the controller, financing pressure, the amount of complexity of overhead in inventory, and the quality of the personnel)).	The results suggest that although all four IR factors were important to auditors, quality of personnel was the most significant.
Wright (1992)	The major thrust of the study was to test empirically the impact of the selected environmental cues (ie factors potentially affecting IR assessment) on auditor disclosure decisions.	Exploratory. (Practicing auditors (63) were asked to determine the appropriate disclosure for a proposed audit adjustment in two actual, disguised cases. The three environmental cues manipulated were the length of the association with the client (short/long), client size (large/medium) and the growth pattern of the client (stable/strong)).	The results indicated that CPAs in the experiment do not appear to have relied substantially on the environmental cues studied in arriving at audit judgments.
Whittington & Margheim (1993)	The study examined the effects of IR, materiality, and the subjective nature of the assertion on external auditors' reliance on internal auditors.	Exploratory. (Audit managers (44) received a hypothetical case. IR and materiality were manipulated (between subject design) at low and high levels. The IR manipulation was based on the amount of doubtful debt provision and the presence of pledged and related party accounts receivable).	The results indicated that at the low materiality level the managers assigned more tests of control work to internal auditors. However, IR factors were not found to be significant.
Monroe and Therry (1993)	The study examined whether auditors incorporate IR, CR and analytical review results according to the AR model when planning audit hours for substantive tests of detail for the revenue cycle.	Exploratory. (Case study questionnaire for hypothetical client. The study manipulated IR at both the financial statement level (client integrity, pressures on management and incentives to bias the financial information) and the individual account level (intercompany sales, credit policy)).	The results suggest that auditors, while sensitive to the manipulation of AR when assessing the likelihood of a material misstatement in an account balance, did not alter the planned level of substantive tests in response to different IR levels.

TABLE 3.2
SUMMARY OF LITERATURE REVIEW: INHERENT RISK
(b): Other Studies

AUTHOR	FOCUS	TYPE OF RESEARCH	FINDINGS
Gibbins and Wolf (1982)	To evaluate potential environmental components at several stages in the audit engagement. (Although the study did not specifically identify and focus on IR factors, several of the environmental components included in the initial stages of the audit fall into this category.)	Exploratory/Descriptive. (Questionnaire) The results are based on the responses of 80 audit partners and managers to a questionnaire including 40 potential components of the environment at five points in the audit process. Twelve of these components can be classified as factors relating to IR of the client.	The study provided a detailed description of the external auditors' perceptions of their environment. The components found consistently most important were client's financial positions and profitability. The client's accounting staff and top management were found to be less important and client's stock performance was found to be consistently unimportant.
Johnson (1987)	To provide some initial descriptive background on the client traits associated with errors in audit populations. IR traits investigated were budget pressure, chief accounting officer evaluations, accounting personnel evaluations, characteristics of the company, financial measures and reasons why unusual attention might be paid to the financial statements.	Investigative/Descriptive. (Survey of information contained in audit workpapers). The study reports the findings of 110 audits of 55 manufacturing companies in U.K.	It summarizes the errors detected in these audits, and it describes the client traits that are associated with the size of these detected errors. Stock, debtors and creditors were the accounts most commonly found containing errors. Return on assets, bonus motivation and budget pressure were related to the size and direction of errors. Personnel problems were also frequently noted, and were more commonly associated with the size rather than the direction of errors.
Peters, Lewis and Dhar (1989)	Operationalizing the conceptual model of IR (based on literature reviews and field study) in terms of a computational model.	Audit Judgement Process/Descriptive. (Field study involving structured and unstructured interviews and observations of experts in audit planning meetings)	The model is still in the process of needing further enhancement. Evidence to date indicates that auditors do not consider it appropriate to generate numerical estimates of risk, the assessment is done on an account by account basis. Auditors reason about client's financial statements using knowledge about changes in the industry and/or client, management's motivation, prior track record etc. and base their assessment on this process.

TABLE 3.2
SUMMARY OF LITERATURE REVIEW: INHERENT RISK
(b): Other Studies (Cont'd)

AUTHOR	FOCUS	TYPE OF RESEARCH	FINDINGS
Houghton and Fogarty (1991)	To determine the characteristics of audit-detected errors and whether areas in which errors occur could be identified during the audit planning process.	Exploratory/Descriptive. (Questionnaire) The results of an error survey of 480 audit engagements in the U.S., U.K. and South Africa conducted by DH & S International.	The study indicated that the occurrence of errors may have as much to do with IR as it does with CR. Specifically the findings indicate that the auditor can effectively assess IR during the planning stage given that: <ul style="list-style-type: none"> • Non systematically processed transactions have a disproportionately higher likelihood of error than systematically processed transactions (approx. 64%); and <ul style="list-style-type: none"> • 73% of errors occurred in areas identifiable during the audit planning process. The largest factor contributing to this knowledge was a history of similar errors in prior years.
Janell and Wright (1991)	To identify approaches employed by major auditing firms to assess IR and the control environment.	Investigative/Descriptive. (Structured questionnaire supplemented by review of audit manuals and/or decision aids)	All firms (6) investigated formally consider IR and control environment but there are variations and marked differences between the firms. Some firms (4) provide combined IR and control environment assessment while others require separate assessment. Some firms (2) require assessment at both the account and audit objective level, some (2) at the objective level only, and some (2) at the account level only. IR is primarily evaluated in an unstructured, narrative approach considering multitude of risk factors and combining these risks into an overall assessment in an unstructured way.
Dirsmith and Haskins (1991)	The study considered the role of the audit firm philosophy (mechanistic and organic world theories) in shaping the independent audit and of how auditors assess IR.	Investigative. (Field study supplemented by an extensive analysis of archival records)	The empirical findings suggest that an audit firm's philosophical position with respect to structure, influences which of the client's characteristics the audit team members see as important in assessing IR. The results imply that relatively organic firms see IR as ranging over a number of important factors, while mechanistic firms do not launch as wide ranging an IR assessment, perhaps because of its relatively problematic, ill-structured non-quantitative character.

TABLE 3.2
SUMMARY OF LITERATURE REVIEW: INHERENT RISK
(b): Other Studies (Cont'd)

AUTHOR	FOCUS	TYPE OF RESEARCH	FINDINGS
Mock and Wright (1992)	<p>To gain a better understanding of substantive evidential planning (at account level) by addressing the following questions.</p> <ul style="list-style-type: none"> • Do audit procedures and/or extent vary significantly across clients and over time. • Do IR or CR assessments differ substantially? • Which risk factors are significantly associated with program differences? 	<p>Exploratory. (Data gathered from actual audit working papers for 159 audits over two years and individual responses of auditors).</p>	<p>The findings suggest that audit programs vary little from year to year. The audit extent was significantly related to several account specific IRs (especially the incidence of prior errors) but not to engagement wide risks. Changes in these IRs over time were not found to be associated with corresponding revisions to the extent of audit testing.</p>
Lea, Adams & Boykin (1992)	<p>The study examines issues involved in appropriately defining IR and CR at the assertion level and aggregating assertion level risk assessments to obtain overall risk at the account balance level. The aim of the paper is to develop a conceptual model of AR assessment that may be used to analyze risks both at the assertion and the account balance level.</p>	<p>Exploratory/Prescriptive. (The analysis and model built upon prior research and auditing standards).</p>	<p>The study develops a model using a 'bottom up' approach to assess IR and CR by assertion for each transaction stream. The proposed model includes several unique features:</p> <ol style="list-style-type: none"> (1) IR definition at the assertion level explicitly takes into account the entire range of possible error magnitudes to which an assertion may be susceptible (ie a probability range rather than single point estimate of error). (2) CR definition at assertion level articulates with IR by recognizing same range of error possibilities. (3) Conditional independence among assertion-level assessments is identified as a basic requirement for achieving coherent aggregations. <p>The component IRs and CRs can be aggregated either by assertion for each balance sheet account or by transaction stream affecting each balance sheet account. The latter is identified as most conclusive to achieving conditional independence among assertion level assessments.</p>
Monroe, Ng and Woodliff (1993)	<p>To gain some insight into auditors' assessment of IR by investigating whether variables presented in the audit literature as having some bearing on IR are viewed similarly by audit practitioners.</p>	<p>Exploratory. (Questionnaire) 48 variables drawn from professional standards audit manuals and academic literature were examined.</p>	<p>The results indicate that these variables are similarly perceived by auditors. Auditors perceive variables pertaining to characteristics of management and history of errors to be major determinants of IR. The findings also suggest that auditors perceive high risk factors as more important and place more weight on them in their assessment of IR.</p>
Waller (1993)	<p>The study examined the association between auditors' IR and CR assessments and the rate of detected misstatement and IR and CR assessment at the assertion level.</p>	<p>Exploratory. Analysis of archival data for accounts receivable, inventory and accounts payable drawn from the audit workpapers of 215 KPMG Peat Marwick audit engagements.</p>	<p>The study found insignificant association between IR and CR. This result was attributed to the predominance of cases in which CR were assessed at maximum.</p>

The research findings on IR can be summarized under two major areas of focus: (i) studies exploring the nature of the IR factors and (ii) studies concerned with the impact of IR on other judgments.

- (i) The studies by Gibbins & Wolf (1982), Colbert (1988), Dirsmith and Haskins (1991), and Monroe, Ng and Woodliff (1993) provide some evidence as to which IR factors are considered to be important to auditors. The specific inherent factors identified by the above studies as important include the client's financial position and profitability (Gibbins & Wolf (1982)), characteristics of management and history of errors (Monroe et al. (1993)), turnover of key positions such as the controller, financing pressure, complexity of account balance component calculation, and the quality of personnel (Colbert (1988). Johnson (1987) examined the relationship between IR factors and errors, and found return on assets, bonus motivation, budget pressure, and personnel problems to be related to the size of the errors.

- (ii) The studies by Mock and Wright (1992) and Monroe and Therry (1993) investigated whether changes in IR variables will have an effect on the extent of audit testing. The results of both studies suggest no revision of the amount of actual/planned audit testing. Wright (1992) tested the impact of specific environmental (i.e. IR) factors on audit disclosure judgments and similarly to the two studies discussed above, he found a lack of significance of the factors on audit judgments. Whittington and Margheim (1993) studied the effect of IR factors on the external auditors' judgments as to the reliance placed on internal auditors. Again, IR factors were not found to be significant.

3.4 Literature Addressing Materiality and Inherent Risk

3.4.1 The Relationship between Materiality and Inherent Risk

Materiality and AR are both assessed during the audit planning stage. As indicated in Chapter 1 materiality (or precision) refers to the magnitude of a given misstatement, while degree of assurance (or risk) refers to the confidence that such a material misstatement is not present in the audited financial statements. The relationship between these two concepts according to the professional pronouncements (AUP27) is an inverse one.

Given the 'prescribed' nature of the relationship between materiality and AR, and given the components of AR (i.e., IR, CR and DR), it is expected that this relationship also exists between IR and materiality as discussed in Chapter 2.

3.4.2 Research on Materiality and Inherent Risk

Only four studies dealing specifically with planning stage materiality have been identified to date (Moriarity and Barron (1979), Mayper (1982), Steinbart (1987) and Pany and Wheeler (1989)). None of these studies addressed explicitly the relationship between materiality and risk. However, the studies and their findings do indicate an existence of a relationship. Mayper (1982) found that the type of internal control (i.e. a CR factor) and the type of asset (i.e., an IR factor) affected auditors' materiality judgments. Steinbart (1987) found that the materiality judgment was influenced by the intended use of the financial statements, the perceived needs of the financial users, prior experiences with the client, the nature of the client (i.e., financial characteristics, industry classification, type of entity) and plans for future financing. The majority of these variables have been presented in the audit literature as having some bearing on IR.

There are only four studies which address the impact of IR on other judgments (Mock and Wright (1992), Wright (1992), Monroe and Therry (1993), Whittington and Margheim (1993)). None of these studies address the judgment of planning materiality.

The Mock and Wright (1992) and Monroe and Therry (1993) studies are of relevance as they addressed the impact of changes in IR variables on the extent of audit testing, which is also dependent on the materiality level.

Lea et. al. (1992) discussed the issue of materiality allocation at an assertion level and indicated that it creates difficulties in defining IR at an assertion level in terms of a specified magnitude of error.

3.5 Conclusion and Summary

Much of the literature as described to date is relatively fragmented dealing with a wide range of aspects in relation to IR and materiality and it is not possible to draw any persuasive or overall conclusions from the research. This is not surprising given the difficulties with the concepts of materiality and risk at both the conceptual and practical level. Given the nature of these concepts, the relative lack of knowledge, and the limited specific guidance provided by the professional and academic literature in relation to assessing and integrating them it is not surprising that most studies as well as the current research, are exploratory/investigative in nature.

As indicated there have been very few studies that have addressed these judgements at an overall financial statement level as a part of the initial planning phase of the audit. Furthermore, none of the studies have addressed the relationship between the two concepts and how the audit technology deals with these issues in practice. The present study is an attempt to provide some insight into these gaps in the literature to date.

CHAPTER 4

Research Methods and Expected Results

4.1 Introduction

The research method employed in the current study can be separated into three major components. These components are the research approach, the data collection, and the participants, and are discussed separately below. Also included in this chapter is the development of the research questions and a discussion of anticipated results.

4.2 Research Approach

The overall research approach can be characterized as a review of content of audit manuals supplemented by an unstructured interview. It is discussed as a three phase approach aimed at identifying the IR and materiality assessment practices and the integration of these assessments during the audit planning process by the major auditing firms.

In phase one, the participating firms were requested to provide the planning sections of their audit practice manuals and/or decision aids² used in the field. The content of these materials was reviewed and analysed for each participating audit firm using a series of questions as a checklist under a number of broad categories which are discussed in detail in section 4.3.

During phase two an unstructured interview based on the checklist was held with the technical manager or partner of each of the participating firms. The information provided in the interview was utilized to corroborate and clarify the data obtained from the analysis of the audit manuals in phase one and to obtain additional

² The decision aids included checklists, standard workpapers, audit programs and audit software.

information. Together these two sources of information complemented each other and provided a comprehensive overview of firm practices.

To ensure that the approaches utilized by each firm were correctly summarized, in phase three, each respondent evaluated the researcher's description of their firm's practices for accuracy and completeness. Respondents replied to the follow up with additional comments and/or additional firm materials.

4.3 Data Collection

As discussed in section 4.2 the data was collected from two sources namely, relevant sections of the audit manual and an interview. In order to gather and analyse the relevant information systematically a series of questions was developed. The development of the questions was based on the researcher's direct knowledge of the planning process and the relevant assessments, an analysis of AUP27, and discussions with academic colleagues and practicing auditors. This series of questions (the checklist) was reviewed for completeness and clarity by two academic colleagues with practical and research background in auditing and a practicing senior audit manager from a firm not participating in the research project. Where appropriate, their suggestions were incorporated.

The checklist (refer Appendix A) contained six separate sections:

- **General:** The questions in this section dealt with the overall firm's audit methodology.
- **Appraisal of Audit Risk:** This section specifically addressed the use of the audit risk model and its individual risk components in order to assess the firm's compliance with AUP27 guidelines.
- **Appraisal of Inherent Risk:** This section specifically addressed evaluation of this component of risk in terms of the firm's audit methodology.

- **Estimation of Materiality:** These questions dealt with the role and assessment of materiality in the context of the audit process.
- **Integration of Inherent Risk Assessment and Materiality:** This section addressed the relationship and the integration of these assessments, and their impact on other aspects of the audit.
- The final section gathered **Demographic Information** about the individuals involved in the interview.

The checklist was initially completed by the researcher for each participating firm using the audit manual as the initial source of information. The answers were subsequently discussed, with the participants in an unstructured interview, to ensure correct interpretation of the information provided and to obtain answers to questions which the manuals did not address. The final completed version of the checklist was then reviewed by the participants for accuracy.

Due to the sensitivity of the material analysed, the researcher gave guarantees of confidentiality of the information obtained from the audit manuals and the interviews and agreed not to associate the name of any participating firm with specific descriptions of their audit methodologies in the presentation of the findings of the research.

4.4 The Participants

The research aimed at engaging 'Big 6' accounting firms only. The reason for this is that these firms spend considerable funds and time on development and research of their audit methodologies and consequently as the leaders in the industry are expected to employ the most 'up to date' methodologies and techniques. All of the 'Big 6' accounting firms in Australia were approached and invited to participate. All the firms agreed to participate in the project.

Since the objective of the research was to identify the IR and materiality assessments and their integration in the large auditing firms, the cooperation of a technical manager or partner of each 'Big 6' accounting firm was sought. All participants held senior positions with technical responsibilities in their respective firms and the development and teaching of the firm methodology was part of their responsibilities.

One of the respondents was a partner, one was a director and four were managers. The average experience level of participants was 13.7 years (range 8 to 20 years) with the experience specific to the technical domain being on average 4 years (range 1 to 9 years). A summary of the demographic information of the participants involved is presented in Table 4.1.

TABLE 4.1				
SUMMARY OF DEMOGRAPHIC INFORMATION OF PARTICIPANTS				
FIRM	CURRENT POSITION	LENGTH OF TIME IN CURRENT POSITION (YEARS)	"TECHNICAL" EXPERIENCE (YEARS)	AUDIT EXPERIENCE (YEARS)
A	Partner	7	9	20
B	Manager	3.5	3.5	9
C	Director	13	6	17
D	Manager	1.5	1	8
E	Manager	6.5	2.5	14
F	Manager	2.5	2.5	14

4.5 Research Questions and Anticipated Results

Given the requirements of AUP27 and AUP10 and the planned mandatory status of these professional pronouncements it is expected that all six firms will comply with the relevant requirements and will address the assessment of both IR and materiality at the financial statement level. Consequently, it is proposed that,

(Research Question 1) - all firms will comply with the professional pronouncements (AUP27) and address IR at the financial statement level and produce a qualitative assessment of IR as part of the planning stage of the audit.

Similarly, the materiality assessment is addressed by the following proposition that,

(Research Question 2) - all firms will comply with the professional pronouncements (AUP10, AUP27) and set a materiality dollar amount at the financial statement level during the planning stage of the audit.

In addition to the assessments of risk and materiality the professional pronouncements require that materiality and risk be considered when determining the extent, timing and nature of the audit procedures but provide few guidelines as to how this integration should be accomplished. It is expected that all firms will comply with this requirement although the firm practices of achieving compliance may vary from a formal specific linkage of both materiality and IR to specific procedures, to only an overall general conclusion re concerns for follow up. Hence, in the current study it is proposed that,

(Research Question 3) - all firms will comply with professional pronouncements (AUP27, AUP14) and address the relationship between IR and the timing, extent and nature of audit procedures but the actual practices in achieving this compliance will vary between the firms.

Similar findings are expected in relation to materiality as addressed in the following proposition that,

***(Research Question 4)* - all firms will comply with professional pronouncements (AUP27, AUP14) and link materiality to the extent, timing and nature of audit procedures, but the actual practices in achieving this compliance will vary between the firms.**

AUP27 also prescribes the relationship between risk and materiality as being inverse in nature. However, given the difficulty and the judgmental nature of assessing both risk and materiality, and the lack of formal guidance for integrating them, it is not expected that the firms' audit methodologies and practices will formally address this relationship. Consequently, it is finally proposed that,

***(Research Question 5)* - the firms will not formally address the relationship between IR and materiality, as prescribed in AUP27, and will not formally integrate these assessments with each other.**

CHAPTER 5

Results

5.1 Analysis of the Firms' Practices in Adopting the Risk Model

The data indicates that all six firms adopt a risk based audit methodology and formally address the evaluation of risk and materiality within this context. All of the firms adopt a 'top down approach' whereby the overall pervasive risks at the engagement level are addressed first, followed by the more specific account level risk analysis and risk assessment at the individual assertion level.

The risk model in AUP24 Appendix IV ($AR = IR \times CR \times DR$) is formally acknowledged and/or related to the firm specific terminology by three firms (B, C and D). The concepts and the general relationship are implicit in the audit tools and methodologies of the other three firms. There is also a considerable diversity in terms of adopting AUP27 definitions of IR and CR. Only one of the six firms uses the identical IR concept and terminology to AUP27 at both the overall financial statement level and the account level. Most of the firms utilize firm specific terminology and concepts, with three out of six firms (B, C and F) addressing IR and CR in combination rather than formally distinguishing between them. Diversity also exists in relation to what is considered to be a source of risk and assurance. Firms A and C do not formally consider CR as a risk but perform the evaluation from the perspective of potential assurance (i.e., a source of evidence). These differences and similarities are summarised in Table 5.1.

	Firm					
	A	B	C	D	E	F
Adoption of risk model as per AUP27 Appendix IV (AR=IRxCRxDR):	Not specifically utilized. The model relevant with the general relationship implicit in audit tools and methodology. Different emphasis in relation to CR.	Formally acknowledged and conceptually linked to firm's audit methodology. No formal utilization of the relationship in practice.	Conceptually identical but audit assurance rather than audit risk model utilized and directly linked to audit methodology and audit strategy.	An expanded version of the model adopted and specifically linked to audit methodology and audit strategy.	General relationship implicit in audit methodology.	General relationship accepted but not specifically utilized in the audit tools or methodology.
Adoption of IR concept as per AUP27 definition:	Different terminology but concept identical in nature.	IR/CR combination.	IR plus some elements of CR at a broad overall level.	Identical concept and terminology.	Identical IR concept at the account level.	IR/CR combination.

The diversity of the firms' approaches and the use of firm specific concepts and terminology within the context of the overall audit risk framework can be also illustrated by a comparison of the financial statement assertions in Table 5.2. All of the firms perform a formal risk assessment at the assertion level but there is considerable diversity in the terminology used and the definitions of identical terms may also differ.

AUP14	Firm					
	A	B	C	D	E	F*
Existence Occurrence	Performance Occurred and Authorised	Existence Occurrence	Validity Rights and Obligation	Ownership	Existence	Real
Completeness	Recorded	Completeness	Completeness	Completeness	Completeness	Recorded
Valuation	Proper Amount	Valuation	Valuation	Valuation	Valuation	Valuation
Measurement	Proper Period	Accuracy	Cut-off	Accuracy	Accuracy Cut-off	Timely
Presentation and Disclosure	Disclosure and Presentation	--	Presentation Recording	Presentation	Presentation and Disclosure	Classified Summased Posted

*Related to specific type of transactions.

5.2 Analysis of Inherent Risk Assessment Practices

Research Question 1 hypothesized that all firms will comply with the professional pronouncements and address IR at the financial statement level and produce a qualitative assessment of IR as a part of the planning stage of the audit.

As discussed in Section 5.1 and summarized in Table 5.1 not all firms adopt IR and CR concepts identical to AUP27 definitions. For the purposes of this analysis firm specific concepts (which are similar to/or include IR as defined in AUP27) have been treated as being synonymous to/or encompassing IR.

The review of the audit manuals and the interviews revealed a mixture of practices. All firms gather information relating to IR (or equivalent) at the financial statement level but only four of the firms produce a formal assessment at this overall level. This assessment is broad in nature and goes beyond the financial statements themselves and takes into consideration other engagement/entity related risks (e.g., risk of litigation and impact on auditors' reputation as a result of the association with the client) which are not specifically related to financial statements or the AUP27 risk model but may have a significant effect on audit planning and audit strategy.

Although the firm practices do not strictly support Research Question 1 at the financial statement level all of the six firms do make a formal assessment at the specific account and/or assertion level. A comparative summary of the IR (or equivalent) assessment practices is presented in Table 5.3.

TABLE 5.3 INHERENT RISK ASSESSMENT PRACTICES						
	Firm					
	A	B	C	D	E	F
Formal assessment performed at:						
• overall financial statement level	Yes	Yes	Yes	Yes	No formal assessment, information gathered only.	No formal assessment, information gathered only.
• other levels	Assessment for material accounts by assertions.	Assessment for material accounts by assertions.	Assessment for significant accounts by risky assertions.	All accounts considered but specific risk assessment by assertions only for specifically identified accounts.	Assessment for material accounts by significant assertions.	Assessment at individual account level. Assertion level considered only for specific type of processing.
Process of evaluation:	Judgmental.*	Judgmental.	Judgmental.	Judgmental.	Judgmental.	Judgmental.
Type of evaluation: (i.e., numeric description such as high, medium, low):	Descriptive.	Descriptive.	Descriptive at overall level but numeric representation assessment at the account level.	Descriptive.	Description of actual risk rather than formal evaluation recommended.	Descriptive.

*The new tools to be introduced in 1995 will significantly reduce the level of judgment.

The other proposition which specifically addressed IR is Research Question 3 and is discussed next in this section. Research Question 2 relates to materiality and is dealt with in Section 5.3.

Research Question 3 was concerned with the relationship between IR and the timing, extent and nature of the audit procedures and it was theorized that all firms will comply with the professional pronouncements and address this relationship. The data supports this expectation with all firms formally linking the risk assessment to the audit strategy and to the audit procedures which address specific risks identified. The summary of these practices is presented in Table 5.4.

TABLE 5.4
RELATIONSHIP BETWEEN INHERENT RISK AND
AUDIT PROCEDURES

	Firm					
	A	B	C	D	E	F
Linkage of IR (or equivalent) to audit strategy and specific audit procedures	<p style="text-align: center;">Yes</p> Audit software ensures linkage of risk factors to IR assessment at assertion level to audit approach and specific audit procedures.	<p style="text-align: center;">Yes</p> Identified risk linked directly to audit approach and procedures (enforced by audit practice aid). However, the level and type of testing judgmental.	<p style="text-align: center;">Yes</p> Workpapers are tailored to risk identification which determines audit strategy and level of testing. Risk assessment is directly referenced to the audit programs.	<p style="text-align: center;">Yes</p> Identified risk (assertion level) referenced to audit programs. The audit strategy mainly is determined by risk assessment.	<p style="text-align: center;">Yes</p> Formally addressed and linked through the audit software.	<p style="text-align: center;">Yes</p> Linkage enforced by both manual and automated audit tools.
Firms A, B, C, E and F utilize manual and/or automated tools which guide and enforce the linkage. All firms utilize analysis and linkage of identified risks at the account assertion level.						

5.3 Analysis of Materiality Assessment Practices

Research Questions 2 and 4 dealt specifically with the materiality assessment and its linkage to audit procedures and are hence discussed together in this section.

In *Research Question 2* it was theorized that all firms will comply with the professional pronouncements and set a materiality dollar amount at the financial statement level during the planning stage of the audit. This proposition was supported by the data gathered. The setting of an overall planning materiality level in relation to each audit engagement was prescribed by all of the six firms' manuals or other guidelines. However, the individual firms' approaches towards providing formal guidance as to how to determine the materiality dollar amount differed significantly. Only one of the firms (firm D) does not utilize judgment in the setting of planning materiality. For the other five firms a considerable amount of judgment is involved. The level of judgment varies between these firms given different emphasis by the individual firms in relation to the guidelines provided. All five firms

provide some level of guidance as to the appropriate base and percentage range. A comparative summary of these guidelines is provided in Table 5.5.

TABLE 5.5						
FINANCIAL STATEMENT LEVEL MATERIALITY						
	Firm					
	A	B	C	D	E	F
Guidance for setting planning materiality:	The setting of materiality is a matter audit judgment. A guided judgmental fraction of AAS5 guidelines.	Some general guidelines re appropriate base and a prescribed percentage range. The choice of appropriate base and specific percentage is a matter of judgment. (Not AAS5 guidelines.)*	General guidance re appropriate base and percentage range. Ultimate choice a matter of judgment. (Not AAS5 guidelines.)*	A specific formula based on the size of the client. (Not AAS5 guideline.)*	Reference to AAS5 as guidelines.	Bases and appropriate percentage range guidelines provided. The appropriate base and specific percentage are a matter of judgment. (Not AAS5 guidelines.)*
* Some of the bases and/or percentages incorporated are identical to AAS5, others are not.						

The data in Table 5.5 also highlights the issue of differential concepts of materiality for reporting purposes (i.e., AAS5 guidelines) and auditing. Five of the six firms either implicitly or explicitly differentiate between these concepts. Firms B, C and F's guidelines are specific for setting auditing materiality and are not identical to AAS5 guidelines. There are similarities between the different firm guidelines, especially firms F and C. Firm D and A's guidelines differentiate explicitly between reporting (AAS5) materiality and audit planning materiality by utilising the AAS5 concept for audit opinion purposes and the audit materiality concept in relation to audit planing, audit procedures, and audit sampling. For firms B, C and F audit materiality is utilized throughout the process including evaluation of errors and at the audit reporting stage. Firm E is the only firm whereby overall audit planing materiality equates to the AAS5 materiality.

AUP27 states that the auditor needs to consider materiality at the financial statement level as well as at the individual account level and/or class of transactions level. All firms comply by giving consideration to materiality at this level. For all six firms the account level materiality is a function of, and is lower than the overall planning materiality. Firms A, C and E provide very little or no guidance for setting the materiality used at this level. Firms B, D and F prescribe the relationship between the overall materiality and the account level materiality. Consequently the level of judgment exercised by individual auditors in setting the account level materiality varies significantly between the firms. The importance of the different levels also varies among firms, with firms, A, C and D primarily focusing and utilizing the overall materiality level rather than the account materiality level. Firms F and B are somewhat similar to these firms, the only difference being the level of conservatism introduced by reducing the planning materiality level by a prescribed percentage to ensure a satisfactory audit outcome. Table 5.6 provides a summary of some of these key features of materiality setting practices by the six firms.

TABLE 5.6						
ACCOUNT LEVEL MATERIALITY						
	Firm					
	A	B	C	D	E	F
Account level materiality recognised:	Yes	Yes	Yes	Yes	Yes	Yes
Relationship between PM* and account level materiality:	Derived from PM taking into account qualitative factors. No specific quantitative guidelines.	Sampling materiality related to PM, but no specific guidelines as to the relationship. Also recognize materiality for reclassification and error evaluation purposes at the account level (prescribed percentage of PM).	Derived from PM taking suspected errors into consideration.	Percentage of PM weighted by the relative size of the account balance.	Not specified other than needs to take PM into consideration and should be lower than PM.	A prescribed percentage of PM.
Other Comments	Focus on PM not account level materiality.		In practice generally same as PM.	Account level materiality only set and utilized for analytical review. For sampling purposes utilize PM.		
*PM = Planning Materiality						

Research Question 4 theorized that all firms will comply with the professional pronouncements and link materiality to the extent, timing and nature of audit procedures. The data suggests that for five of the firms planning materiality is the key factor in determining which accounts are subjected to detail risk analysis. For the remaining firm it is a factor but more emphasis is placed on qualitative rather than quantitative factors. Hence it can be concluded that the planning materiality is linked to the extent and nature of audit procedures indirectly through its determination of the level of risk analysis and subsequent audit strategy at the account level by all six firms. However, beyond this general guidance only two of the firms (C and D) link

materiality directly to the level of testing at an account level. These practices are summarized in Table 5.7.

TABLE 5.7						
THE LINKAGE BETWEEN MATERIALITY AND AUDIT PROCEDURES						
	Firm					
	A	R	C	D	E	F
Utilization of overall planning materiality during the audit process:	Built into audit tools. Determines which risks to consider and document and thus helps to determine scope of testing.	Guidance for risk analysis, error evaluation, and audit opinion consideration.	Directly linked to risk assessment, sample size, error evaluation, and audit opinion.	A major factor in risk analysis and determines sample size.	Guidance as to which account balances need to be considered re risk thus impacting on the scope of testing.	Helps to determine the scope of audit procedures (risk assessment and sample size), and audit opinion.
Linkage of materiality to audit programs and specific detailed audit procedures:	No Implicit in risk assessment and therefore in the extent of testing.	No Conceptually guides scope of testing but in practice not formally documented.	Yes The extent of testing is a function of materiality and risk assessment.	Yes In determining sample size and evaluating analytical review.	No Guides risk assessment and hence implicitly extent of testing.	No Implicit in risk assessment and a factor if statistical sample is utilized.

5.4 Integration of Inherent Risk and Materiality

Research Questions 1 through to 4 addressed assessments of IR and materiality separately. Research Question 5 deals with the relationship between these assessments.

Research Question 5 theorised that the firms do not formally address the relationship between IR and materiality and do not formally integrate these assessments with each other. The proposition is supported by the data especially at the overall financial statement level.

The evidence indicates that when setting the planning materiality individual auditors in five firms need to exercise considerable judgment in relation to adopting an

appropriate base and percentage in this decision. These five firms acknowledge in their audit manuals that client related qualitative factors (i.e., primarily IR factors) need to be taken into consideration when making these judgments. However none of the firms other than firm A provide specific formalized guidance as to how these need to be integrated and utilized in setting the planning materiality. Thus, with the exception of firm A, the relationship although implicit within the judgments themselves is not formally addressed and formally integrated. The relationship (implicit for firms B,C,E,F and explicit for firm A) appears to be primarily unidirectional in nature whereby the overall client characteristics (i.e., IR factors) are part of the overall context (i.e., an input) within which materiality setting process at the financial statement level takes place. The remaining firm (D), is the only firm within the materiality assessment made in isolation to risk assessment.

At the account level the relationship between risk and materiality appears to be reversed. The planning materiality or account level materiality is the prime determinant for detailed risk analysis at an account/assertion level for all of the firms. This process is formalised within the context of the audit methodology and/or audit tools. The nature and extent of audit procedures for accounts subjected to risk analysis is primarily determined by the level of assessed risk. Materiality is not formally integrated after the risk assessment has taken place unless sampling is utilized and it becomes a factor formally recognized in the sample size calculation (firm C, D and E).

The accounts which are not material (and not risky) are not the focus of audit attention and are subject to minimal testing. In practice, all firms subject each account to some level of testing. The minimal level of testing is analytical review comparison. A comparative summary data of the integration practices of IR and materiality assessments is presented in Table 5.8.

TABLE 5.8
RELATIONSHIP BETWEEN INHERENT RISK AND MATERIALITY

	Firm					
	A	B	C	D	E	F
Financial statement level:	IR factors have direct influence on the level of PM (i.e., ↑ or ↓ percentage applied to the base). This is a formal procedure.	IR factors need to be taken into consideration when setting materiality (i.e., base and percentage determination). General guidance only, the actual process is informal.	PM assessed within context of engagement risk (i.e., judgment of appropriate base and percentage).	PM determined by a formula. Independent of IR assessment.	PM determined within the context of client knowledge. An informal process.	Client characteristics taken into consideration when determining base and percentage. An informal process.
	IR factors ↓ PM	IR factors ↓ PM	IR factors ↓ PM	PM determined without reference to risk.	IR factors ↓ PM	IR factors ↓ PM
Account level:	Inherent risk factors at account level are considered within the context of materiality. Formalized within the methodology and audit tools.	Materiality determines accounts selected for risk analysis. Conceptual rather than formal linkage.	Overall risks and materiality guide risk assessment (i.e., risk considered only if potential misstatement is material). Formalized within the methodology.	PM only one of the factors guiding risk analysis and audit strategy.	Risk analysis is performed within context of materiality.	Materiality guides risk analysis.
	PM ↓ IR assessment	PM ↓ Account level materiality ↓ IR/CR assessment	PM ↓ IR/CR assessment	Overall Risks ↓ PM ↓ IR assessment	PM ↓ IR assessment	PM ↓ Account materiality ↓ IR/CR assessment
Extent of testing at audit program level (prime determinant):	Function of risk.	Function of risk.	Function of risk (and materiality for sample selection).	Function of risk (and materiality for sampling).	Function of risk.	Function of risk. (Account materiality a factor in sample size.)
PM = Planning Materiality						
↓ = guides/performed within the context of						

CHAPTER 6

Conclusion

6.1 Summary and Discussion of Major Findings

The aim of this research was to contribute towards a better understanding of the materiality and IR assessments and their integration and relationship by investigating practices currently employed by the major auditing firms in making these assessments and integrating them during the planning phase of the audit.

The data was obtained from the audit practice manuals, other relevant decision aids and an unstructured interview with the technical partner or manager from each of the 'Big 6' accounting firms in Australia.

The findings indicate a diversity of practice in complying with the prescribed professional pronouncements. Three of the firms do not formally acknowledge or link the risk model as prescribed in AUP27 and AUP24 to the firms' audit methodology but rather use it as a general framework in audit planning. Another firm acknowledges the model and links it to the firm methodology and terminology at a conceptual (not practical) level, whilst another utilizes the notion of audit assurance rather than the audit risk model. Finally, one firm uses an expanded audit risk model by formally recognising two subsets of DR, analytical review risk and test of detail risk.

The diversity in firms' approaches to adopting the risk model framework was also reflected in the terminology and the use of the concept of IR. Three of the firms address IR and CR in combination rather than formally distinguishing between them as is the case with the other three firms. One firm utilizes the identical concept and terminology at both the financial statement level and account level. All of the firms produce an assessment of IR at the account and/or assertion level but only four firms

assess IR at the overall financial statement/engagement level. These assessments are made on a qualitative descriptive scale, with one of the firms recommending a description of the risk rather than any formal evaluation. It is interesting to note that with the risk assessment being a product of judgment and the documented problems associated with judgment formation, only one of the firms is currently introducing audit software decision aids which will significantly reduce the amount of judgment by producing an automatic evaluation from the information gathered.

Although all of the firms utilize analysis and evaluation of risk at the assertion level, there is a considerable diversity in the terminology and definitions of assertions used which are firm specific and differ to the terms described in AUP14. Some firms perform risk analysis for material and/or risky accounts for all assertions, others only for risky or significant assertions. One of the firms considers assertions only for routine type of transaction processing (e.g., sales). All of the firms link identified risk at the account assertion level to audit strategy and audit programs. For five of the firms this linkage is enforced by the use of mandatory manual and/or automated audit tools.

Diversity in firms' approaches was also found in relation to materiality. All of the firms set an overall planning materiality dollar amount for each audit engagement but the level of guidance and judgment in setting materiality differs significantly between the firms. Only one of the firms uses AAS5 guidelines and no other guidance for the settings of its materiality. This is significant in view of the fact that AAS5 is an accounting not an auditing standard. The other firms utilize additional guidelines and differing percentages in relation to appropriate bases. Three of the firms utilize AAS5 materiality guidelines in relation to the final audit opinion, (for two of these firms this is not the audit planning materiality), while the others use audit planning materiality as a primary determinant of their audit opinion. All of the firms consider materiality at an account level but there is a diversity of focus with four of the firms

generally utilizing the overall materiality throughout the audit process and two firms using an account materiality which is a prescribed percentage of the overall materiality.

The firm practices of integrating materiality and risk are also diverse. The five firms which need to exercise a considerable amount of judgment in relation to setting the overall materiality acknowledge that client related qualitative factors (including IR factors) need to be taken into consideration when making these judgments. However, only one of the firms provides formalised guidance as to how these IR factors are utilized and integrated in setting the planning materiality. The firm which has the formula based planning materiality (i.e., little judgment exercised) does not integrate the qualitative factors into this process. While at the financial statement level the materiality assessment for five of the firms is made within the context of the risk factors, the relationship appears to be reversed at the account level where the risk assessment of individual accounts and assertions is performed within the context of materiality (i.e., risk generally considered only for accounts and assertions if potential misstatements are likely to be material). The audit strategy and the extent of testing, once risk assessment has taken place, is primarily a function of risk. Materiality is only formally integrated if sampling is utilized. Materiality is thus implicitly rather than explicitly linked to the extent and nature of audit tests as the detailed risk assessment at the account level is performed within the context of materiality.

6.2 Limitations

As with most studies, limitations exist with regard to the methodology used and thus the generalisability of these studies. Firstly, it could be argued that the source of data collection captures only one aspect of the process, i.e., 'the official line', which may differ to what happens in practice. This could be overcome in future studies by extending the data collection to a review of actual audit workpapers to determine as to

how the process is actually conducted. Thus, the current study documents 'what should' rather than 'what is' done in terms of the current practice.

Secondly, the analysis of the audit manuals was performed by one person only, (i.e., the author). A second analysis by another person with a high level of agreement would have greatly increased the perceived reliability of these findings. This limitation was partly overcome by the firms' review and agreement with the data analysis in phase three of the research method.

Thirdly, the changing professional, regulatory and business environment as well as the wider societal demands are continually being incorporated into the audit methodologies and practices. Thus, the time frame of the study limits its impact somewhat as practices continually change and become more sophisticated and reflective of the environmental demands.

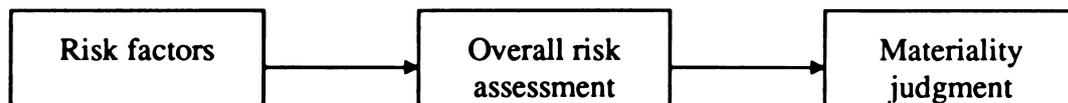
6.3 Suggestions for Further Research

The current study has identified a variety of practices adopted within the context of the current audit risk methodology. This diversity leads to a number of important questions for consideration. Future studies could address whether the differential approaches to considering IR and/or CR as a potential source of reliance rather than risk lead to different audit strategies and audit program decisions and, if so, which is preferred in terms of efficiency and effectiveness. Another important question for future consideration in terms of both practice and standard setting is whether making a combined IR and CR assessment or requiring separate IR and CR assessments leads to different assessments and audit strategy decisions.

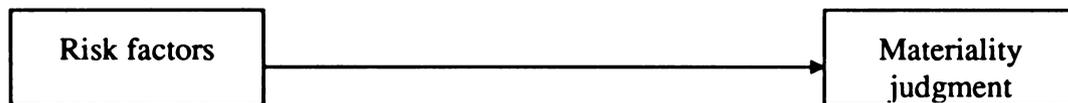
The results also indicate a judgmental unstructured evaluation of IR and CR based on a multitude of individual factors. The use and relative importance of specific factors and the combination of these factors into an overall risk assessment (at both the

financial statement level, the account level and assertions level) and its ultimate impact on the audit process needs to be better understood.

Future studies might also address the relationship between an auditor's evaluations of risk (high/medium/low) and the materiality judgment, as well as the effect of the different approaches to making materiality judgments. The current practice indicates a number of approaches, which can be modelled as follows:-



or



Future research could consider whether these different approaches lead to different materiality judgments and, if so, which is preferred.

A related factor worthwhile of exploration is the level of the necessary knowledge (i.e., senior/manager/partner) to be able to proficiently make these assessments and integrate them, the type and level of training necessary to gain this level of knowledge, and the type of audit decision aids most useful in this decision process.

6.4 Conclusion

Overall this study has found considerably diversity of practice in relation to the current approaches employed by the major auditing firms in assessing and integrating IR and materiality during the planning stage of the audit. This is not surprising given the relative lack of guidance by the professional pronouncements as to how these assessments might actually be made and related in practice, thus leaving it up to the individual auditor as to how to arrive at these assessments and how to integrate them. This diversity suggests that the profession, the academic community and the audit standard setters need to address as to what constitutes compliance with the auditing statements (especially within the context of the codification process being currently undertaken), and what is an accepted practice in terms of potential litigation. The other issue of relevance to the profession is whether or not these different practices lead to different audit strategies and extent of testing decisions and, if so, which is the preferred practice in terms of efficiency and effectiveness.

APPENDIX A

RISK AND MATERIALITY CHECKLIST

GENERAL

1. Does the firm employ an international audit approach (A.A.)?
2. In what country was the firm's A.A. primarily adopted?
3. To what extent does the Australian A.A. vary from the country in question 2?
4. When was the current A.A. adopted? (Year)
5. Does the firm's methodology formerly incorporate AUS1 and the AUPs?
6. Briefly describe the essential elements/characteristics of firm's A.A.
7. Would you classify the current A.A. as risk based?
If 'no' how else would you classify it?
8. Is the importance of risk and materiality assessments considered within the context of the firm's A.A.?
9. Does the firm's A.A. formally address the evaluation of
 - (a) materiality
 - (b) risk levelsIf 'yes' at what stage of the audit is the evaluation performed?
10. Briefly describe the approach adopted to detailing work to be performed in relation to the planning section (e.g., standard workpapers, programs) and specifically to risk and materiality assessments.
11. When was the last major revision to the current A.A.?
and/or
Is a revision to the current A.A. planned in the next 12-18 months?
If 'yes' please provide details in relation to:
 - the timing of the revisions
 - major features of the revision
 - will these specifically affect the approach to materiality and risk assessment and if yes, how?
12. Has the firm undertaken any recent research in relation to the AR methodology and/or risk and materiality assessments?
If so, describe the publication(s).

APPRAISAL OF AUDIT RISK

13. (a) Does the firm's A.A. utilize the concept of IR, CR and DR as defined in AUP24 and AUP27?
If 'no' how does the firm's use of risk differ to the above?
- (b) Is the risk model relationship as detailed in AUP24 Appendix IV ($AR = IR \times CR \times DR$) adopted in the firm's A.A.?
If 'no' how does firm's A.A. model differ to the above?
14. If the risk model is adopted, is it employed:
- (a) at an overall financial statement level
 - (b) broad areas (segments) involving a number of accounts affected
 - (c) for each individual material account
 - (d) at a specific account assertion level
 - (e) other (describe)
15. Are the components of risk, in particular IR, assigned probabilities expressed in numeric terms or simple descriptive terms such as high, medium, low?

APPRAISAL OF INHERENT RISK

16. Is IR (or equivalent) evaluation conducted for all clients?
17. Is IR evaluation performed:
- (a) overall for the client
 - (b) by broad areas/segments including a number of accounts affected
 - (c) for individual material accounts
 - (d) for individual assertions at an account level
 - (e) other (describe)
18. Is formal guidance provided to assist in gathering information relevant to IR evaluation or is it a matter of auditor judgment?
Detail tools or techniques which are employed to facilitate IR evaluation.
(e.g., is a standard workpaper, questionnaire used)?
19. What is the extent of documentation in relation to IR evaluation?
(e.g., use of memos, detailed program, checklist)?
20. What level of staff is generally recommended to be involved in IR evaluation?
21. Describe the extent and nature of staff training in relation to IR evaluation.

ESTIMATION OF MATERIALITY

22. Is a materiality assessment made in relation to each audit engagement?
23. Is an overall planning materiality level assessed during the initial planning stage of the audit?
If 'no', is any other level of materiality assessed at any other stage of the audit?
- If 'yes' is there more than one estimate of materiality made for different purposes e.g.,
- (a) preliminary estimate for detail testing at an account level
 - (b) for evaluating errors
 - (c) estimate for determining adjustments to the financial statements
 - (d) for overall audit report purposes (ie qualification v non qualification)
- What is the relationship between the different estimates/purposes?
24. How is the overall materiality level utilized during the audit process? Provide details.
25. Is formal guidance provided for determining the materiality level?
If 'yes' provide details.
26. How is the materiality assessment documented?
27. What level of staff is responsible for setting the materiality level (comment specifically in relation to the overall planning materiality at the financial statement level).
28. Describe the extent and the nature of staff training in relation to setting the planning materiality.
29. Does the firm's A.A. distinguish between accounting materiality and overall planning audit materiality?
If 'yes' how, and is this relationship formally considered and documented?

INTEGRATION OF INHERENT RISK ASSESSMENT AND MATERIALITY

30. Which of the following factors determine the extent of audit testing under the firm's A.A:
- (a) IR factors
 - (b) CR factors
 - (c) Materiality
 - (d) Prior experience on the audit
 - (e) Results of auditing procedure
 - (f) Type of information available
 - (g) Other (describe)

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31. Once IR is appraised is the level of risk directly linked to audit programs and specific detailed audit procedures?
32. Is the materiality level directly linked to the audit programs and specific detailed audit procedures?
33. Are all accounts subject to some testing irrespective of materiality?
If 'yes', what is the minimum level of testing? (e.g., comparison with last year?)
34. What criteria are used to identify areas requiring more or less audit effort?
35. Are there certain areas where work must always be performed at or around year end?
If 'yes' what are these areas?
36. Is the relationship between materiality and IR (or equivalent) formally considered during the planning stage or any other stage during the audit?
Provide details.
- If 'yes'
- (a) Are specific guidelines provided for this process? Provide details.
 - (b) How is the relationship/integration documented?
 - (c) What level of staff is involved in this integration process?
 - (d) Does the training specifically consider this relationship/integration?
- If 'no' why is this not considered necessary?
37. During the planning process which is undertaken first?
- (a) materiality assessment
 - or
 - (b) inherent (audit) risk assessment
- Is this sequence formally addressed by the firm's A.A.?
38. Is planning materiality revised during the audit?
If 'yes' under what circumstances would this occur? Provide details.
Is this formally addressed by the firm's A.A.?
39. Is IR revised during the audit?
What factors would lead to the revision?
Is this formally addressed by the firm's A.A.?

DEMOGRAPHIC INFORMATION

NAME: _____

CURRENT POSITION: _____

**LENGTH OF TIME IN
CURRENT POSITION:** _____

**TOTAL EXPERIENCE/INVOLVEMENT IN TECHNICAL CAPACITY IN
THE PRESENT AND/OR PREVIOUS POSITIONS (YEARS):**

TOTAL AUDIT EXPERIENCE (YEARS): _____

APPENDIX B

HOLSTRUM & MESSIER (1982) SUMMARY OF EMPIRICAL RESEARCH ON MATERIALITY

RESEARCH METHOD	GROUP STUDIED		
	Users	Auditors	Comparative
	<i>(Analysts, Equity Investors)</i>	<i>(CPAs)</i>	<i>(Auditors, Users and/or Preparers)</i>
Archival	O'Connor and Bernstein 1967 Collins 1974	Copeland and Fredericks 1968 Neuman 1968 Frishkoff 1970	
Questionnaire Survey		Dyer 1975	Woolsey 1954 and 1973 Pattillo 1976
Judgment-Capture Experiment	Sweeney 1980 Rose, Beaver et al. 1970	Moriarity and Barron 1976; 1979 Ward 1976 Newton 1977 Hofstedt and Hughes 1977 Messier 1981 Krogstad, Ettenson and Shanteau 1981 Schultz and Reckers 1981	Boatsman and Robertson 1974 Firth 1979 Emery, Thakkar, and Moriarity 1981

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