Competition Commission
Statutory Audit Market investigation

Initial review of relevant academic literature

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1. Introduction

1.1 Overview

This section offers an overview of the academic literature on the audit market and a discussion of what is/is not relevant to the CC. Logically, most of the relevant academic literature should appear in the accounting discipline, which includes audit as a separate field. Additionally, as we are dealing with the provision of a service in a market, economics (particularly the field of industrial economics) is a relevant source of material. The field of industrial economics concerns issues such as market organisation, market competition, barriers to entry, etc. However, from an economics perspective, the investigation of competition in the audit market is quite intractable, due to the particular characteristics of the audit market. The audit market is heavily regulated and the requirement for all listed companies to have an audit results in inelastic demand. Further, the nature of the audit service itself (in terms of processes involved and the quality of the final product – the audit opinion) is not generally observable to outsiders. There is also the possibility of cross-subsidisation of audit fees arising from the provision of non-audit services (NAS) and knowledge spillovers. Consequently, the determinants and consequences of concentration are especially difficult to assess using theoretical analysis and, therefore, must be investigated empirically. As audit firm costs are unobservable from public data, audit fees (revenues rather than profits) must generally be used to proxy for profits.

Disciplines other than accounting which may contain relevant material include finance, law, psychology and management. In these fields, as in the accounting field, virtually all academic research literature is published in the form of journal articles, rather than books (with the possible exception of law). The brief is to provide an overview of academic literature, hence non-academic literature, such as official reports (e.g. EC papers, AIU reports), is generally excluded.

1.2 Scoping

To provide an initial scoping of material that may be relevant, literature searches of leading literature databases were conducted using the keywords 'audit market competition', covering the past 25 years and restricting the search to title/abstract to make the search manageable. The databases used were Web of Knowledge, Business Source Premier, Google Scholar and (for unpublished working papers) SSRN. 'Hits' were screened and the most promising items reviewed. As these databases generally cover all likely fields, reasonable assurance is provided that key lines of enquiry for the CC will be identified. No further rounds of searching based on these initial articles was conducted, due to the time constraint imposed for this preliminary literature review.

In addition to this exercise, the author's personal archives of literature on the topic areas of: audit concentration; auditor change; audit fees; auditor independence (inc. non-audit services); audit quality; and audit interactions are used. To capture recent material, the most recent issues of dedicated auditing journals were reviewed for material (*Auditing: A Journal of Practice and Theory*; *International Auditing Journal*). Specific searches were undertaken for the topic areas of: auditor reputation; joint audit; audit inspection regimes; and client acceptance decisions. Studies of audit markets outside of the 'large company sector' specified by the CC have been excluded, i.e. unlisted/private company market; public sector; audit markets in developing countries.

The literature in many of the key areas of interest to the CC is vast. This preliminary review is inevitably partial; I have focussed on the most recent research.

1.3 Main research approaches and methods

Theoretical:

- Non-mathematical logical argument (most typifies law papers).
- Analytical modelling (mathematical) (most typifies economics papers).

The theoretical perspective most commonly applied to the demand for audit is agency theory; which is closely related to signalling theory (both economic theories) (see section 2.1.1 below).

Empirical:

- Archival, i.e. uses publicly available data (either from a commercial database or hand collected) and either (i) presents simple descriptive statistics or (ii) conducts inferential statistical analysis (frequently regression analysis). The sort of data collected includes: audit report qualifications; audit fees, non-audit fees, auditor changes, auditor identity, financial restatements; measures of earnings quality (e.g. abnormal accruals). A subset of these studies relates changes in audit characteristics to market share price reactions; the relation between these is used to make inferences about how users interpret particular audit characteristics. Such studies are referred to as event studies.
- Proprietary data sets obtained for audit firms, such as data from working papers (quite limited).
- Experimental. This is where artificial data is presented to participants (either key interested parties such as auditors or surrogates, i.e. students) and they are asked to make decisions. The amount of such studies is quite limited.
- Survey, including large-sample questionnaires and small sample interview studies.
- Case studies.

1.4 General limitations

All research methods suffer from weaknesses and limitations. Consequently, it is desirable to use a range of research methods in relation to a research question and see whether they tend to give the same answer. If they do, our confidence in the answer is considerably increased. Studies that collect real-life data from a large number of cases have the advantages of being real-life and using large numbers to permit reliable generalisation. The disadvantage is that, by using naturally occuring data, it is difficult to control for other potential influences. This limitation can be overcome by conducting an experiment that creates artificial data for a very limited number of variables. However, the responses given by subject during the experiment may not reflect their real-life behaviour. From a research perspective, the demise of Andersen's in 2001 presented an interesting event, since it offers a natural experiment.

A specific limitation associated with audit research is that many of the conceptual variables of interest either relate to private data (such as audit costs) or are subjective constructs (such as auditor independence and audit quality). Consequently, proxy measures must be identified and these may not be reliable or valid proxies, undermining the findings of the study. In some cases, access to proprietary data (e.g. working papers of audit firms) can permit measurement of the underlying conceptual variable, however negotiating this kind of access is difficult.

A large proportion of archival research specifies and empirically tests a model which includes one or more audit characteristics as the dependent or independent variable(s). In testing such models, several econometric problems exist. Simple regression models comprise a dependent variable being 'explained' by one or more independent (i.e. exogenous) variables. However, any observed association does not necessarily imply causality, which is however often what is inferred. Causality may flow in the other direction or in both directions. A variable omitted from the model may be driving both the dependent and an independent variable. These problems are often referred to as the endogeneity problem and signal model misspecification. Measurement error and selection bias (auditees do not randomly assign to auditors: for example, large auditees tend to have large auditors) are other forms of endogeneity (Brown et al., 2011). Advanced statistical methods for overcoming these problems do exist (e.g. instrumental variables, matching), but are seldom used by auditing researchers. Another assumption of many regression studies that may not hold in practice is that a linear relationship between the dependent and independent variables is assumed (Francis, 2011).

1.5 Changing regulatory and economic context[1]

Regulatory cycles (or waves) have been documented to exist. In relation to audit, deregulation in the 1980s resulted in the commodification of audit and the emergence of business risk audit methodologies (Kinney, 2005; Jeppesen, 1998, Windsor and Warming-Rasmussen, 2009; Power, 2007; Giroux and Cassell, 2011). In 2002, however, the Enron scandal prompted a global shift to re-regulation in the form of the Sarbanes-Oxley Act (SOX) (2002), which introduced major changes to the US audit, financial reporting and corporate governance regimes. These changes included: inspection of listed company audits by a new independent agency, the Public Company Accounting Oversight Board (PCAOB); independent setting of auditing standards; restriction of non-audit services to audit clients; and a requirement for greater engagement with the auditors by the company audit committee. Similar regulatory changes subsequently occurred in the UK and many other countries (Lennox, 2009).

Key post-SOX changes to the UK financial reporting and auditing regime which had the potential to impact upon audit quality include:

1. FRC was given responsibility for setting auditing standards, setting ethical standards for auditors and conducting independent inspections of public interest audits
2. FRC made changes to the UK Combined Code for Corporate Governance (renamed the UK Corporate Governance Code in 2010) requiring much closer engagement between the audit committee of a company and its auditors, thus creating a much more significant role for the ACC in the audit process
3. A further major change in the EU was the move to International Financial Reporting Standards (IFRS) in 2005 for the group accounts of all companies listed on EU markets. IFRS, while described as principles-based, are nevertheless more rules-based that UK GAAP (in that detailed guidance is offered).

Most recently, the banking crisis of 2007 has prompted the current round of debate concerning financial regulation (audit, accounting and corporate governance regulation).

[1] This section draws upon the discussion in Beattie et al. (2011a).

1.6 Competition in the audit market

1.6.1 General considerations

Standard texts on industrial organisation, such as Pepall et al. (2008), explain the nature of market structure, behaviour and performance. From the 1940s until the 1970s, the study of industrial organisation centred on the Structure-Conduct-Performance (SCP) paradigm, which posits that there is a direct link from structure, to conduct, to performance. The implication is that the more concentrated an industry, the more market power[2] the organisation exercises and thus the larger the deviation from competitive pricing. This view resulted in aggressive antitrust policy in the US and Europe (Pepall et al., 2008).

Over time, it was realised that increased concentration, when combined with cost efficiencies, does not necessarily lead to higher prices. In equilibrium, both concentration and performance are endogenously determined by underlying cost and demand parameters (Beattie et al., 2003). Thus, more efficient firms should grow faster than less efficient firms resulting in a more concentrated industry structure.

In the 1970s, the focus of industrial organisation researchers shifted from the study of market structure (S) and performance (P) to the study of conduct (C) (i.e., strategic behaviour). It was gradually realised that the decisions made by firms regarding pricing, nature of product/service, expansion and investment feedback to affect structure. Strategic interaction was modelled using (non-cooperative) game theory, giving rise to the 'new industrial organisation' theory of the 1980s and which continues to the present. It was shown that it is difficult to construct an economic model in which there are significant merger gains due to cost efficiencies – this is the 'merger paradox'. As a consequence of these theoretical ambiguities, competition regulation must also rely on empirical analysis to predict ex ante and observe ex post the effects of changes in market structure.

1.6.2 Audit market

Audit firms can compete on price, product or service quality. Price is audit fees, which must be disclosed (although this requirement is relatively recent in the US). Product competition is conducted on the basis of technical expertise (proxied by reputation, which is perceived to be related to size, and industry specialisation). Service quality relates to factors such as the existence of local city office, or the ability to provide non-audit services (NAS).

Another potential competition strategy in most markets is advertising/solicitation. This type of activity by audit firms has been subject to various forms of regulation over the years. Opponents of solicitation argue that independence may be impaired, while proponents argue that it permits more informed choices by the purchaser. Chaney et al. (2003) construct theoretical models to examine the efficiency of client-auditor alignments in markets where uninvited solicitation is allowed and banned, identifying the conditions under which independence is impaired. They conclude that the potential benefits of solicitation are such, however, that it should be permitted and independence ensured by means of increased regulator scrutiny and penalties for audit failure.

In the UK, audit firms became able to advertise and promote their services to non-clients

[2] Market power refers to conditions where the providers of a service can consistently charge prices above those that would be established by a competitive market.

in 1983, and competitive pressures increased (Beattie and Fearnley, 1994). The result was that tendering became commonplace in the early 1990s, and concerns rose regarding the practice of ‘low-balling’ (ie prices set below cost in the first year of engagement to secure the appointment). There was also concern that ‘opinion-shopping’ was being practiced, where a company seeks a second interpretation of an accounting treatment where they dislike the view taken by the incumbent auditor. This concern prompted the Chartered Accountants Joint Ethics Committee to issue consultation papers on each of these issues in 1992.

Banker et al. (2003) estimate the production function of the top 100 US accounting firms for the period 1995-1999. They find evidence of increasing returns to scale, justifying acquisition and merger activity. Numan and Willekens (2012) investigate the impact of spatial competition in the US market on audit fees. They examine the location of the auditor in terms of industry expertise relative to both the client company and the closest competitor, within a city-level market. They find that fees increase with (i) the incumbent auditor’s location relative to the client (i.e. closer alignment is associated with higher audit fees) and (ii) the incumbent auditor’s location relative to its closest competitor (i.e. greater distance between the industry specialisation of the incumbent auditor relative to the closest competitor in product-space is associated with higher audit fees). Audit market concentration per se does not increase audit fees.

An interesting recent US study examines competitive strategies of the Big4 in the US by using news reports to document the purchases of Andersen’s office upon the firm’s demise. Kohlbeck et al. (2008) find that the probability that a firm purchased a specific office is greater in city markets where the acquiring firm: already had a presence; had a lower ratio of local Andersen clients to the purchaser’s client; and had already acquired relatively more local former Andersen public clients than other firms prior to the purchase.

Another interesting study finds that, post-SOX, over six hundred small audit firms exited the market for SEC clients. These were lower quality firms (in terms of severity of PCAOB inspection reports). Successor auditors were of higher quality (more likely to issue a going-concern opinion) (DeFond and Lennox, 2011).

No distinct literature appears to exist on the topic of barriers to entry in the audit market.

2. Specific areas

The specific topics below are not mutually exclusive, with many studies addressing two, three (or more) areas (e.g. a study of audit market concentration and audit quality). These studies, which examine the linkages between key issues, are discussed under the heading which seems most appropriate.

At the beginning of each section, I generally give some indication of the volume of research and the methods used. The general findings and the main limitations appear at the end of the section.

2.1 Audit quality

The classic definition of audit quality has several dimensions, including technical competence, auditor independence and the market’s perception of these technical aspects. In addition, service quality aspects (such as responsiveness and non-audit services) are of interest to client company management.

2.1.1 Nature, volume and methods[3]

Audit quality contributes to the overall quality of financial reporting. The other components of financial reporting quality are: quality of accounting standards[4], rigour of enforcement, corporate governance rules, and contextual factors (economic and institutional). Audit quality can be viewed as 'a theoretical continuum ranging from very low to very high' (Francis, 2004). Francis (2011) notes the existence of multiple drivers of audit quality. DeAngelo's (1981a) seminal economic analysis of the concept defines audit quality as the 'market-assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system and (b) report the breach'. The joint probability of breach discovery and reporting signifies *actual* audit quality; the market-assessed probability of this signifies *perceived* audit quality. Both constructs are important. DeAngelo's definition focuses on the quality attributes of the audit outcome and the market's perception of these attributes, whereas the audit process attributes are notconsidered. However, these two technical aspects of competence and independence do not represent the whole spectrum of audit quality attributes. Other important dimensions are: the effectiveness of the regulatory framework, service quality and responsiveness (e.g. Warming-Rasmussen and Jensen, 1998; Duff, 2004). Service quality can be defined as how well the delivered audit service meets the customer's expectations. Noting the lack of a clear agreed definition of audit quality, the Financial Reporting Council (FRC) cites a key definition provided by its Audit Inspection Unit (AIU) (FRC, 2006, p.19):

> *'Undertaking a quality audit involves obtaining sufficient and appropriate audit evidence to support the conclusions on which the audit report is based and making objective and appropriate audit judgments. A quality audit [also] involves appropriate and complete reporting by the auditors which enables the Audit Committee and the Board properly to discharge their responsibilities.'*

This definition focuses on the technical aspects of actual audit quality. Because audit quality is not directly observable by outsiders, proxies are used to measure it. There are two publicly observable outcomes of the audit process: the audit report and the audited financial statements. The main proxies for audit quality used in the academic literature are: earnings quality, audit report qualifications and financial restatements. Earnings quality, in turn, can be proxied in a number of ways: properties of earnings (including abnormal accruals, earnings persistence, smoothness, timeliness and loss avoidance) and external indicators (earnings restatements and regulatory enforcements (Dechow et al., 2010). Table 1 describes these various measures of audit quality.

The general advantage of external indicators over properties of earnings measures is that the researcher does not have to specify a model and from that *infer* earnings misstatements. Therefore, the risk of identifying a misstatement when none exists (type 1 error) is lower. However, the type II error rate is higher (risk of not identifying a misstatement when one exists). Dechow et al. (2010, p. 351) sets out the specific strengths and weaknesses of each measure.

[3] This section draws upon the discussion of audit quality in Beattie et al. (2011a).
[4] Imhoff (1998) and Levitt (1998) discuss the characteristics of high quality accounting standards.

Table 1: Proxy measures of Audit Quality

Measure of audit quality	Description	Link to audit quality	Method of calculation
Properties of earnings:			
Abnormal accruals	Evidence of discretion being used by management to manage earnings	Measures of earnings quality linked to the financial statements; financial statements being a publicly observable outcome of the audit process	Actual accruals minus estimated normal accruals. Several models of the accrual process exist – see Dechow et al. (2010, Exhibit 2)
Earnings persistence	The strength of the relationship between consecutive periods' reported earnings		β in the equation: $Earnings_t = \alpha + \beta Earnings_{t-1} + \varepsilon$ See Dechow et al. (2010)
Smoothness	Variability of reported earnings relative to variability of cash flows		σ(Earnings)/σ(Cash flows) See Dechow et al. (2010)
Timeliness	Timely loss recognition indicates higher quality earnings		Basu (1997) proposes 2 measures, one based on returns and the other based on net income changes (see Dechow et al, 2010, p. 363)
Loss avoidance	Earnings management around the key benchmark of profit/loss		Inspection of distribution of reported earnings to identify 'kinks' around 0
Financial restatements	Financial statements are revised at the behest of the company, their auditor or an enforcement body in order to correct various types of error (intentional and unintentional) or apply new accounting standards retrospectively	External indicator of earnings/audit quality	Fact of restatement disclosed within financial statements
Regulatory enforcements	Issuance of an enforcement release by the SEC (in the US)	External indicator of earnings/audit quality	Publicly disclosed by enforcement body (e.g SEC)
Audit report qualifications	a) An audit report other than an unqualified report, ranging from a qualification (due to a deviation from GAAP or a limitation of scope) to a going concern qualification and an adverse opinion (when the accounts do not present an true and fair view in accordance with the applicable reporting framework)	b) Publicly observable outcome of audit process	c) Inspection of audit report
Ex ante equity risk premium		Investor's perception of audit quality	Company-specific cost of equity capital minus risk-free interest rate. See Boone et al. (2010)

The audit quality measure most commonly used in the audit literature is abnormal accruals, a measure of earnings management. Financial statements are prepared using a matching (or accruals) approach, rather than a cash basis. Normal accruals reflect fundamental performance, whereas abnormal accruals (also referred to as discretionary accruals) reflect distortions caused by, for example, earnings management behaviour by management. The normal accruals process is modelled, then the residuals (actual accruals minus estimated normal accruals) are taken as a measure of abnormal accruals. Several models of the accruals process exist – one of the first (the Jones model, developed in 1991) defines accruals as working capital accruals plus depreciation; normal accruals are modelled as a function of the change in revenue and property, plant and equipment (all variables scaled by total assets). Other models with superior explanatory power have subsequently been developed.

Financial statements are jointly produced by auditors and their clients. Hence, earnings quality = f(audit characteristics, controls for non-audit factors). The research design problems associated with tests of this form are discussed in Francis (2011, 132-4).

In recent years, various national audit inspection regimes have been set up post-Enron (the Audit Inspection Unit (AIU) in the UK, which is a subsidiary body of the FRC; the PCAOB in the US). This inspection permits *direct* observation of some elements of audit quality, based on the audit documentation (see section 2.10 below). The ex ante equity risk premium can be used as a proxy for audit quality as *perceived* by investors.

Audit quality research comprises analytical work, which seeks to infer quality outcomes in highly simplified settings, and empirical studies. The vast majority of audit quality research takes the form of quantitative archival empirical research, which, as explained above, uses various observable outcomes to proxy for audit quality, such as: audit opinions; auditor selection and change decisions; financial statement outcomes; and analysts' forecasts. The association between these proxy measures and a range of possible quality determinants (e.g. audit firm and audit partner rotation; the impact of corporate governance characteristics; and the impact of audit firm review and inspection) is examined. The advantage of these indirect, archival approaches is that real-world data are used; however, the causal connection between the variables of interest is not always clear-cut. Research designs that employ direct methods, rather than indirect methods, include experimental and survey studies. There have been relatively few surveys of attitudes and beliefs regarding audit quality and what the key dimensions and determinants are.

Francis (2011) presents a general framework for thinking about the factors associated with audit quality, focussing on the supply-side. This framework identifies the various units of analysis in audit research, as follows:

1. Audit inputs (audit tests and engagement team personal)
2. Audit processes (the implementation of audit tests by engagement team personnel)
3. Accounting firms (the organisation unit in which engagement teams work, which has various policies and procedures)
4. Audit industry and audit markets (with the potential for industry structure to affect economic behaviour)
5. Institutions (accounting and auditing regulators and the broader legal system)

6. Economic consequences of audit outcomes (client companies and users of audited accounting information).

There are understood to be three sources of demand for differential audit quality. First, agency theory and signalling theory (Francis and Wilson, 1988). Agency theory shows how the bonding role of an audit (the audit can be viewed as a contract which limits the actions of the agent-managers, serving to better align management's actions with principal-shareholder interests) can reduce agency costs arising from the anticipated self-interested behaviour of company managers. The existence of differential agency costs across clients and over time therefore results in a heterogeneous demand for audit services, characterised by deAngelo (1981a, b) as different levels of audit quality. Second, the information demand for audit, originally explored by Dopuch and Simunic (1980 and 1982), (which is closely related to the agency demand, since it also arises from information asymmetries). The selection of credible auditors not only signals management's honesty and quality to all interested parties, but also reduces agency costs via the monitoring function. The arguments of both deAngelo and Dopuch and Simunic are often referred to as the 'product differentiation hypothesis'. Third, the insurance dimension of an audit. It is argued that the audit serves to indemnify investors and creditors against financial losses via the auditor's professional liability exposure. The insurance demand for audit has proven very difficult to empirically distinguish from the information roles.

Each of these three sources of audit demand generates a rank ordering of auditors. DeAngelo (1981a) argues that auditor size serves as a surrogate for audit quality, since larger firms have reduced incentives to lower audit quality opportunistically in order to retain any single client. Dopuch and Simunic (1980 and 1982) infer that credibility is associated with an auditor's reputation or brand name, based on the observed dominance of large audit firms in the market for publicly-held company auditors. It has since been recognised that industry-specific reputation is an important alternative basis for rating audit firm credibility. Finally, larger audit firms have 'deeper pockets' than smaller firms due to their higher level of insurance.[5]

Watkins et al. (2004) offer a synthesis of theory and (mainly US) empirical evidence in relation to audit quality in the pre-Enron/Andersen era and when proxies for audit quality dimensions was at an early stage of development. The studies mentioned below are generally more recent.

2.1.2 Analytical research

In early studies of the auditor size-audit quality relation, auditor size is exogenous and used to explain differences in audit quality and audit fees (e.g. DeAngelo, 1981a; Dopuch and Simunic, 1982).

Sirois and Simunic (2011) use the well-established 'endogenous fixed cost model' (a Cournot oligopoly model) to investigate how audit quality is related to auditor size and industry structure by modelling competition in a market where both quality and firm size are endogenous. Firms compete on price and quality using fixed investments in audit technology, with the level of investment increasing with both market size and investor protection. The model shows that high levels of market concentration do not indicate a lack of competition.

[5] This section draws upon the discussion in Beattie and Fearnley (1995).

2.1.3 Archival research

Most of this vast body of research (hundreds of studies) is set in the US. The literature investigates associations between audit quality (proxied in various ways) and a range of related factors, such as concentration, fees, NAS, corporate governance characteristics,

Francis et al. (2012) investigate the association between Big4 concentration (measured (i) as a group relative to non-Big4; and (ii) within the Big4) and audit quality (measured by earnings properties) in 42 countries. High Big4 group concentration is associated with higher audit quality for both Big4 and non-Big4. Higher within Big4 group concentration (i.e. uneven distribution within the group) is associated with lower audit quality for Big4 clients. This finding arises after other country characteristics associated with earnings quality are controlled for.

Early research used *audit firm size* as an indicator of audit quality. The general approach is to treat size as a dichotomous variable, separating audit firms into two classes – the top tier (BigN) and the others (for studies of listed companies this generally means the mid-tier firms). Boone et al. (2010) examine audit quality differences between Big4 and second tier firms for the period 2003-6 using US data. They find little difference in actual audit quality (measured as propensity to issue going concern qualification and abnormal accruals) but lower perceived quality for mid-tier clients.

More recently, a subset of this literature focuses on *auditor industry specialism* as an indicator of audit quality. Habib (2011) provides a useful, up-to-date review of the literature in this area. It has been found that industry specialism constrains income smoothing by US banks (DeBoskey and Jiang, 2012). Verleyen and De Beelde (2011) conclude, from European evidence for 2003-4 and ten large industry sectors, that industry specialist knowledge can (broadly) be transferred across countries.

Most recently, the impact of *specialism at city office level* has also been explored. Reichelt and Wang (2010) find that audit quality (measured as abnormal accruals) is highest when the auditor is *both* a national and industry-specific industry specialist (US study). Francis and Yu (2009) find that larger Big4 offices offer higher quality audits (measured by propensity to issue a going-concern qualification and by abnormal accruals) (US study; 2003-05 period). In the UK 2002-03 setting, Basioudis and Francis (2007) find that there is a significant fee premium for city-specific industry leaders relative to other Big 4 auditors.

The link between competition and audit quality (measured as the incidence of restatements) is investigated by Newton et al. (2011) (US study). Restatements are found to be more likely to occur in metropolitan statistical areas that exhibit higher levels of auditor competition.

2.1.4 Survey research[6]

An advantage of the survey approach is that the relative importance of a range of factors can be assessed. In an early US study, Carcello *et al.* (1992) survey preparers, auditors and users and find that important factors are: knowledge of the client; industry expertise; responsiveness; and compliance with auditing standards. Post-SOX, 82% of 253 US audit committee members surveyed believed that audit quality had improved (Center for Audit Quality, 2008), although this belief does not necessarily equate to fact. The reasons for perceived improvement were identified as being: increased audit committee oversight; requirements regarding internal controls; better communication with audit committees;

[6] This section draws upon the discussion of audit quality in Beattie et al. (2011a).

CEO/CFO sign-off on financial statements; increased emphasis on quality of auditors; more rigorous audits; and audit committee oversight of auditors. Interview evidence from US company directors indicates that new regulation on the management-external auditor-audit committee relationship has improved audit quality, although there are suggestions that this benefit has involved costly compliance (Cohen *et al.*, 2009).

In the UK, the first study to investigate audit quality attributes was Beattie and Fearnley (1995). A total of 29 desirable auditor characteristics, rated by listed company finance directors, revealed the crucial importance of firm-level attributes (integrity, technical competence and reputation) and partner-level attributes (technical competence and working relationships). Beattie et al. (2011a) survey 498 UK listed company chief financial officers (CFOs), audit committee chairs (ACCs) and audit partners (APs) in 2007 to obtain views on the impact of 36 economic and regulatory factors on audit quality post-SOX. All groups rated various audit committee interactions with auditors among the factors most enhancing audit quality. However, ISAs and the audit inspection regime, aspects of the 'standards-surveillance-compliance' regulatory system, are viewed as less effective.

Duff (2004) explicitly distinguishes two main components of audit quality – technical quality and service quality. Using a measure adapted from the services literature comprising 56 items relating to audit firm, audit partner and audit team, Duff surveys audit partners, finance directors and fund managers in 2001-2 before the post Enron changes were implemented. It is found that technical quality is characterised by status (reputation and capability), independence, and knowledge (expertise and experience), while service quality is characterised by responsiveness, non-audit services, and understanding (empathy and client service).

Academic research has influenced the development of audit quality frameworks which are used to underpin policy. The FRC Audit Quality Framework (FRC, 2008) identifies five drivers of audit quality: the culture within an audit firm; the skills and personal qualities of audit partners and staff; the effectiveness of the audit process; the reliability and usefulness of audit reporting; and factors outside the control of auditors affecting audit quality. Following the financial crisis, The Australian Treasury, in their discussion document on audit quality, adds two further audit quality drivers to the FRC framework– the audit regulation framework and audit review processes (Commonwealth of Australia, 2010, p.3).

2.1.5 Independence studies[7]

The issue of auditor independence, in particular its nature and determinants, has been the subject of investigation and pronouncements by policy-makers and the accountancy profession for several decades. The concept of independence has proved, however, to be difficult to define precisely. Representative definitions are: 'the ability to act with integrity and objectivity'; 'the ability to resist client pressure'; 'an attitude/state of mind'; and 'the conditional probability of reporting a discovered breach' (DeAngelo, 1981a). A subsidiary issue is whether independence is an absolute concept or is a matter of degree.

The current UK, EU and international regulatory framework for auditor independence adopts a principles-based threats and safeguards approach. The US takes a more rules-based approach. The UK framework is issued by the Auditing Practices Board (APB)

[7] This section draws upon Beattie et al. (1999).

(Ethical Standard 1: Integrity, Objectivity and Independence); the international framework is issued by the International Federation of Accountants (IFAC). The threats are: self-interest, self-review, management, advocacy, familiarity or trust, and intimidation. There are four main sources of safeguards – regulatory, audit firm, client company and refusal to act.

No formal 'theory' of auditor independence exists and thus, to date, analytical models concerning independence are very limited. Factors affecting independence generally fall into two broad categories: economic factors and regulatory factors. Certain economic factors are incorporated in the model developed by DeAngelo (1981b), which concludes that lowballing does not impair (actual) independence, however, this model fails to incorporate critical factors, such as the level of NAS provided by the auditor. The frameworks all distinguish between independence in fact (referred to as *independence of mind*) and independence in appearance, both being important. Beattie and Fearnley (2002) discuss various economic models of auditor independence. Modelling is a useful aid to understanding because it allows us to simplify a very complex reality and focus attention on certain key variables and relationships. These models assume economic rationality on the part of market participants. Unfortunately, the analysis is often limited to simple single-period settings that are not representative of the usual auditor-client relationship. In addition, these models make a number of simplifying assumptions, some of which can be quite restrictive. Nevertheless, these studies generally show that the joint provision of audit and NAS by incumbent auditors does not adversely affect auditor independence. This is a significant finding, in that it allows us to see that economic incentives generally act to produce independent behaviour on the part of auditors.

Research into auditor independence has generally relied upon rational argument to identify potential explanatory factors and empirical studies to assess their significance. These empirical studies assess the impact upon *perceived* independence since independence in fact is unobservable and typically employ a mail questionnaire approach. The four themes commonly addressed are the economic dependence of the auditor on the client company, audit market competition, the provision of NAS, and laxity in the regulatory framework. Other factors which have been discussed include: auditor tenure; the auditee's financial condition (auditor independence is argued to increase as the auditee's financial condition deteriorates, due to the greater risk of legal exposure); the degree of acculturation to audit firm norms; the existence of an audit committee; and disclosure of non-audit fees.

In some cases, the questionnaires present a list of factors to be assessed individually, whereas in other cases, a limited number of factors are combined in 'case studies' with a repeated-measures, fixed effects design, allowing investigation of interaction effects. The factors examined are, in most studies, restricted to potential *threats* to independence, with potential *enhancement* factors not being considered.

The 1990s witnessed a rise in the level of non-audit services (NAS) purchased from auditors as auditors enter into new service areas and also increasing competition within the external audit market (evidenced by aggressive fee renegotiation, tendering, and lowballing). Using a questionnaire instrument, Beattie et al. (1999) investigate U.K. interested parties' perceptions of the influence on auditor independence of a large set of 58 economic and regulatory factors. Forty-six factors have a significant impact on independence perceptions for *all* groups (finance directors, audit partners, and financial journalists). The principal threat factors relate to economic dependence and non-audit service provision, while the principal enhancement factor is the existence of an audit committee. More recently, Dart (2011) conducts a UK questionnaire study in 2004 (post-Enron) that investigates the perceptions of two classes of shareholder regarding three key independence threats (economic dependence, NAS and long tenure). The former two threats are perceived as more serious that the latter. Private investors are significantly more concerned with all threats than institutional shareholders, suggesting that greater familiarity with the issues reduces concerns. Beyond the UK, a recent US experimental study involving bank loan officers finds that audit firm rotation enhanced perceptions of audit independence but not audit quality (Daniels and Booker, 2011). Quick and Warming-Rasmussen (2009), however, do find that German investors' perceptions of auditor independence decrease with the provision of most types of NAS.

More recently, archival studies using proxies for perceived auditor independence have emerged. For example, an Australian study Bugeja (2011) finds no association between perceived auditor independence (proxies based on NAS provision) and takeover premiums. A US study using earnings response coefficients as a proxy finds no association with NAS provision (Ghosh et al., 2009). In the UK, Basioudis et al. (2008) find that financially distressed companies with high non-audit fees are less likely to receive a going-concern modified audit opinion, suggesting actual auditor independence may be impaired.

2.2 Auditor/director/audit committee interactions

This is a relatively new area of research which considers the dynamics of the final stage processes of the audit. Research that examines the black box of high-level audit interactions tends to use direct methods: i.e. experimental and survey methods. Brown and Wright (2008) offer an overview of research in the area of negotiation.

2.2.1 Experimental research

Experimental research allows strong causal inferences to be made; however the number of variables that can be examined is limited and the setting is artificial. In some cases, formal models (such as economic game-theoretic models) are tested. More recent experimental research into audit interactions adopts a psychological perspective and has focussed on negotiation strategies and tactics (e.g. Bame-Aldred and Kida, 2007; Hatfield et al., 2008). The variables examined include: auditor experience and engagement risk (Brown and Johnstone, 2009); mandatory audit firm rotation (Wang and Tuttle, 2009); auditor rank (Trotman et al., 2009), negotiation experience (Fu et al., 2011).

Pomeroy (2010) is one of the few studies to explore the influence of audit committees on negotiation using experimental methods (Canadian setting). It is found that negotiation knowledge has no effect on audit committee investigation (the asking of probing questions) and that investigation becomes more extensive as the proposed accounting becomes more aggressive. In another experimental study, DeZoort et al. (2008) find that US audit committee member support for auditor-proposed adjustments is significantly higher in the post-SOX era.

2.2.2 Questionnaire research

To date, research using survey methods, while overcoming some of the problems associated with experimental approaches, does not generally explore the influence of audit committees. One of the first experiential questionnaires was undertaken in the UK in 1995 by Beattie et al. (2000). Comparable questionnaires were sent to the CFOs and audit engagement partners (AEPs) of listed companies, eliciting the frequency with which, over a three year period, a set of 46 financial statement and audit-related issues was discussed, negotiated and resulted in a change to either the accounting numbers or disclosures. Similar surveys were undertaken in the Canadian content (Gibbins et al., 2001; 2007). Agreement was reported to have been reached somewhere between both parties' original positions in 41% of cases, on the auditor's original position in 32% of cases, and on the client's original position in 4% of cases, with a new solution being generated in 16% of cases. The CFOs did not involve the audit committee early in the negotiation process, often informing them when the issue was resolved.

2.2.3 Interview research

An alternative survey approach is the use of qualitative interviews. Some of this research adopts an explicitly interpretative, sociological perspective on auditing. For example, Pentland (1993) identifies 'comfort production' as the key objective of audit activity. Beattie *et al*. (2001) conduct in-depth, matched interviews with the CFOs and AEPs of six major UK listed companies, to uncover the story behind key interactions. From this evidence, they develop a grounded theory model of the negotiation process and the factors that influence the nature of the outcome of interactions (summarized in Beattie et al., 2004). This research approach involves the coding of data, initially looking for concepts which can be grouped into categories, which have associated dimensions. The core category is the interaction itself. The most distant group of influences was the global regulatory climate, followed by the external national trading and regulatory climate, general contextual factors (the quality of the primary relationship, company circumstances, audit firm characteristics and circumstances and the company buyer type[8]), specific contextual factors (the substantive issue that was the subject of the interaction, the objectives of the parties, and the identity and role of key third parties) and the interaction itself (events, strategies, outcome and consequences). This approach has since been replicated in the Canadian context with broadly similar results (McCracken, Salterio and Gibbins, 2008).

The first study of this type to include the audit committee members was Beattie et al. (2011b), which reports on nine UK listed company case studies covering entities of different size, industry sector and employing different auditors. The researchers conducted interviews with CFOs, AEPs and audit committee chairs (ACCs). The study is revisiting the approach of Beattie et al. (2001) but in the context of the much changed 2007 UK regulatory framework. The study provides evidence that the ACC (generally the most financially literate member of the audit committee) is fully engaged in the financial reporting process. They manage the business of the audit committee and decide which issues are worthy of consideration by it. Often they personally take on the monitoring role that is formally assigned to the audit committee, leaving the audit

[8] Company buyer type (a general contextual factor) is a concept introduced by Beattie and Fearnley (1998a), which inductively derives four audit buyer types: the grudger; the status-seeker; the comfort-seeker; and the resource-seeker. These buyer types capture the diversity observed in relation to what the client company wants from their auditor. The grudger sees little value in audit, and hence seeks to minimize audit fees and is generally unhelpful to the auditor. The status-seeker sees limited value in audit but wishes to gain credibility and reputation by associating with an audit firm of high status. The comfort-seeker sees significant value in audit and wants assurance that controls are operating effectively and the financial statements are of high quality. Finally, the resource-seeker, who also sees significant value in audit, wants technical financial reporting advice, business ideas and non-audit services. However, this type of advice and additional service is no longer permitted under the ethical standards for auditors.

committee to play a more ceremonial role at the end of an interaction ('reviewing' or 'approving' proposed solutions).

The study also revealed that, in a culture where all parties share the objective of compliance with standards to keep clear of enforcement bodies, the CFO and AEP are keen to take an agreed position to the ACC or audit committee so that there is no loss of personal reputation (particularly as directors who are not members are likely to attend audit committee meetings). Equally the ACC wants to be kept informed of emerging issues and is keen not to have last minute surprises or be placed in the position of arbiter. While the audit committee and ACC have been given more formal power on accounting and auditing matters, they accept that other parties are likely to have a richer understanding of technical accounting requirements and the business itself. The confrontations which characterised financial reporting interactions in the past (e.g. Beattie et al., 2001) have been replaced by problem-solving behavior.

Beattie et al. (2011b) present a revised grounded theory of the interaction process in which the crucial influences relate to the regulatory regime, leaving the general and specific contextual categories at the periphery. A decrease in the range of strategies adopted is observed, compared to the eight generic strategies observed in the Beattie et al. (2001) study.[9] Changes in the interaction environment are shown to have reduced the variability of outcomes, especially outcome quality, and to have had a very significant homogenising effect on AEP behaviours (in all case AEPs were considered a safe pair of hands). It is concluded that the regulatory framework has made it very difficult for AEPs of lesser quality to operate in the current environment, but also for the 'crusader' to thrive. This latter finding is because there are significant disincentives to 'go beyond' the accounting and auditing standards as they are written, since true and fair was interpreted to mean compliance with IFRS with little scope to apply an override. A slight reduction in the scope for very difficult outcomes is shown due to: the enhanced role of the audit committee; the existence of more rules-based accounting standards which limited the scope for disagreement; the more rigorous enforcement regime.

2.3 Auditor reputation

Auditor reputation is one dimension of audit quality and is proxied by audit firm size and industry specialisation. Thus, much of the literature discussed in section 2.1 above applies. Section 2.9 below, on switching, refers to the literature on auditor selection in an IPO setting (equity capital providers).

A recent review of the extant *corporate* reputation literature (located within the management literature) concluded that reputation, in the context of corporate practices, lacks a comprehensive and accepted definition (Walker, 2010). This paper, which I have not examined in detail, may offer some interesting insights.

The studies that refer specifically to reputation in their title are relatively few in number. These studies use analytical, and archival methods. An analytical paper (published in the

[9] Five strategies are observed: assertiveness (AEP stating their position firmly at the outset); sanction (audit qualification threat); reason (CFO or AEP using evidence to support their argument); coalescing (ACC using the audit committee to secure agreement); and higher authority (usually an audit firm technical department). In the prevailing culture of compliance no evidence of ingratiation, conditions being attached to acceptance or bargaining strategies were observed. In particular, the reciprocity-based bargaining strategy (i.e. strategic give and take concessionary strategy) identified by Hatfield et al. (2008) in the US environment was not found.

management literature) uses a game theory model of interaction between a manager and an auditor. In a single period setting, reputation concerns adequately motivate the auditor; in repeated interactions, such concerns prove insufficient (Corona and Randhawa, 2010). Where fraud is detected in a later period, the disclosure of this fraud may serve to highlight non-detection in a previous period, damaging the auditor's reputation.

Andersen's indictment and demise offered a natural experiment for examining reputational effects. This was investigated in a number of ways using archival data. Barton (2005) examined the timing of defections in relation to the indictment (US study). Clients that defected sooner, mostly to another Big5, were those that were more visible in the capital markets, rather than those with higher agency costs. This is consistent with these clients seeking to preserve their own reputations for credible financial reporting. In an Australian study, Bugeja (2011) finds that in hostile takeovers, target shareholders receive a higher takeover premium when a big4 firm (a proxy for auditor reputation) audits the target, but only in the period prior to Andersen's demise.

In a Japanese context (where litigation plays no significant role), Skinner and Srinivasan (2010) use the scandal surrounding an audit failure by PwC's Japanese affiliate (ChuoAoyama) to explore reputational impact and strategies. A two-month suspension was imposed on the affiliate. Approximately 25% of the affiliate's clients changed auditor, showing the importance of reputation, especially larger clients and those with higher growth options. PwC rebranded the affiliate Misuzu and also formed a new firm (PwC Aarata) to take over the most prestigious international clients.

2.4 Audit fee models

This is a very large body of literature that can be traced back to the fee model proposed by Simunic (1980). Issues investigated include the determinants of audit fee level and the changes in audit fees following some event (such as auditor change). Audit fees, as well as non-audit services (NAS) fees paid to the incumbent auditor, have been disclosed in the UK for many years. In more recent years, a breakdown of NAS by type of service has been required. In the US, audit fees have been disclosed for some years and in Germany since 2005. Previous to this, US studies estimated audit fees based on client size.

2.4.1 Analytical research

Simunic proposed that an auditor's cost function comprised both direct production costs and expected future losses arising from the audit (e.g. litigation costs). Since costs are unobservable, the classic audit fee model links fees directly to the attributes of the client. In other words, client attributes are used as proxies for the factors of production and process cost and the market is assumed to be competitive.

Several analytical studies of audit pricing exist. Some models assume ex ante perfect competition, while others, such as Gigler and Penno (1995) induce imperfect competition by modelling cost differences across auditors. Implications for auditor switching, NAS pricing are derived.

2.4.2 Empirical research

Reviews of the empirical literature can be found in Hay et al. (2006), Causholli et al. (2010) and Hay (2011), with the studies by Hay using formal meta-analysis methods to combine the findings from many archival studies. The explanatory power of these models has consistently been in the region of 70%. The many explanatory variables that have been used in audit fee models are classified into three categories by Hay et al. (2006) – client attributes, auditor attributes and engagement attributes.

Client attributes have the greatest influence, especially client size. Complexity measures (such as number of subsidiaries and extent of overseas operations), inherent risk (stock and receivables, which require special audit procedures) and gearing are positively linked to audit fees; profitability is negatively linked.

Auditor attributes focus on measures of auditor quality (as explained in section 2.1 above, this is measured using auditor size and/or industry specialisation (at national and/or city level)), with a positive association being observed empirically. This is referred to as the 'fee premium'.

Engagement attributes focus on the existence of audit problems and the level of NAS. Audit problems are signalled by the issuance of a modified audit report, which has the expected positive link with audit fees. NAS, perhaps surprisingly, has been found to be positively associated with audit fees, indicating neither the presence of knowledge spillovers (economies of scope) that are passed on to the client in reduced audit fees, nor audit being used as a loss leader to obtain profitable NAS work. The most recent research, reviewed in Hay (2011), concludes that internal control and corporate governance are positively associated with audit fees.

In a recent Australian study, Hamilton et al. (2008) estimate fee models before and after Andersen's demise and find no evidence of cartel pricing, consistent with competitive markets.

2.5 Non-audit services (NAS) (see section 2.1.5 also)

NAS provision by the incumbent auditor is considered to be a serious threat to auditor independence. Beattie and Fearnley (2002) offer a detailed (but now rather dated) review of the literature on auditor independence and non-audit services. They divide empirical studies of NAS into six categories: descriptive studies of the amount and type of NAS, studies of the determinants of the purchase decision and four types of study into the consequences of joint provision. This latter set covers the impact of joint provision on independence in appearance (by looking at the perception of independence) and the impact on independence in fact (by looking at the association between joint provision and (i) audit pricing; (ii) audit opinion and litigation; and earnings quality. Their overall conclusion is that, while there is very little clear support for the view that joint provision impairs independence in fact, there is a reasonable consensus that joint provision adversely affects perceptions of auditor independence. Schneider et al. (2006) offer a similar conclusion in their review of the literature.

Post-Enron prohibitions on the provision of certain types of NAS led to large reductions in the amount of NAS provided by incumbent auditors. The changed regime introduced widespread restrictions but not a total ban on the provision of NAS. Ethical Standard 5 (ES 5), issued by the APB, addresses auditor independence issues associated with the provision of NAS. Beattie et al. (2009) provide a review of the post-Enron changes to NAS regulation in the UK, EU and US. They report findings from a study by Deloitte (2009) which summarises the percentage of NAS fees to audit fees from 1997 to 2008 for FTSE 100 companies. NAS provision to audit clients dropped from a peak of over 300%

of audit fees in 2001 to 75% in 2008. This drop can be attributed to both regulatory changes and voluntary choices made by companies seeking to avoid criticism.

Beattie and Fearnley (2009) examine, by means of a questionnaire carried out just before the banking crisis in 2007, the impact of changes to the non-audit services regime on the decisions of UK listed company finance directors, audit committee chairs and audit partners. They find that 'there are four main drivers of these changes, two from the company perspective and two from the audit firm perspective. The enhanced role of the audit committee in developing a policy for NAS purchase which was introduced by the Combined Code (2003) and the Smith Report (2003) has made audit committees more conscious of the importance of auditor independence and therefore reluctant to buy services from their auditor. The second, less visible, driver is the risk to the directors of a challenge from activist investors and from adverse publicity where the level of NAS appears too high or the services disclosed appear inappropriate. For the auditors the requirement to comply with ES 5 has restricted their ability to provide many services regardless of client need, and evidence is found of a wide range of services which firms no longer provide to their audit clients. Furthermore, the UK's audit inspection regime has created an environment where breaches of ethical standards or inaccurate reporting of the breakdown of NAS are likely to be discovered, providing a further deterrent to NAS provision by the auditors.' They also find evidence from comments made by respondents of concern that the additional restrictions have adversely impacted the efficiency and effectiveness of the financial reporting and auditing process, as auditors have less knowledge and understanding of the business.

In a US experimental study, the potential to provide NAS did not affect client acceptance decisions (Asare et al., 2005). In a US archival study, Krishnan et al. (2011) examine the link between earnings management (abnormal accruals) and NAS pre and post-SOX, distinguishing between income-increasing and income-decreasing earnings management. They find that the decline in earnings management was greater for companies with greater declines in NAS, a result driven by downward earnings management (i.e. negative discretionary accruals). Their interpretation of this is that litigation and reputation loss concerns overshadowed NAS-driven incentives to allow income-increasing earnings management in the pre-SOX era' these concerns were less strong with respect to income-decreasing earnings management.

2.6 Tenure, audit firm/audit partner rotation and effect on auditor independence

The literature on this topic is fairly large. Empirical studies mainly use archival data, with some experimental and survey studies including this issue. The relationship between audit quality and tenure is conceptually unclear, as there are offsetting influences. Long tenure is associated with greater acquired expertise, as the information asymmetry between the client company and auditor is reduced. New auditors face steep learning curves. However, long tenure is considered a potential threat to auditor independence. It is argued that the relationship becomes to 'cosy' and the auditor is insufficiently sceptical. For this reason, auditor rotation is proposed. Rotation can be at the audit firm level or the individual engagement/review partner level. Some countries have had mandatory audit firm rotation for many years (Italy, Brazil, Singapore).

Regulations have become tighter in this area due to scandals and crisis and mandatory audit partner rotation in now in place in the UK. The detailed provisions are in Ethical Standard 3 *Long Association with the Audit Engagement* (APB, 2009). For listed companies, the engagement partner cannot act for more than five years and the quality control review partner for more than seven years.

The auditor switching literature shows that the rate of audit firm change is very low, indicating long tenure periods. Moizer and Porter (2004) report a rate of 2.25% among listed UK companies in the 1990s. The evidence in relation to the impact of long tenure on audit quality (and perceptions of audit quality) is mixed, although most evidence does not support mandatory rotation to reduce tenure periods (hence increasing audit quality). For example, Gul et al. (2009) find that short tenure is associated with lower earnings quality (consistent with a lack of client-specific knowledge), especially for non-industry specialists. Jenkins and Velury (2008) find that reported earnings are more conservative in cases of long tenure (US study). Li (2010) extends this analysis, reporting that the result holds only for large companies or companies strongly monitored by their auditors. Ruiz-Barbadillo et al. (2009) investigate a period when audit firm rotation was mandatory in Spain, finding no evidence of a higher propensity to issue going-concern qualifications. Jackson et al. (2008) find that audit quality (measured as the propensity to issue a going-concern opinion) increases with audit firm tenure and is unaffected when measured as discretionary accruals (Australian study). Lim and Tan (2011) find that the relation between audit tenure and audit quality is conditional on auditor specialisation and fee dependence (archival US study). The positive link between tenure and quality is stronger in the presence of specialists and lower economic dependence.

By contrast, Joe et al. (2011) use a proprietary US Big4 audit firm working paper data set from 2002 to find evidence that audit adjustments are more likely to be waived for clients with whom the firm has had a longer association.

In relation to audit partner rotation, Ryken et al. (2007) document the impact of mandatory rules introduced in Australia in 2003. They note that smaller audit firms and firms in remote locations incur differentially high costs of compliance. Another Australian study finds that audit partner rotation increases audit quality (measured as discretionary accruals) while firm rotation decreases audit quality (Fargher et al., 2008)

2.7 Joint-audit

There is a limited amount of research looking at the implications of joint-audits, due to the limited number of settings where joint audit practice exists. Joint audit is uniquely mandatory in France, a regulation put in place to increase market competition and raise audit quality by creating a reciprocal view of audit work. Two relatively recent papers examine this situation, using archival evidence of auditor identity and other company-specific characteristics.

Piot (2007) examines joint-audit interconnections (attraction-repulsion measures) among the BigX, mid-tier and small audit firms in 1997 and again in 2003, following the PwC merger in 1998 and Andersen's demise. The tendency for firms to systematically collaborate is considered by measuring an attraction/repulsion index. Despite increasing concentration, competition has remained intense, with no indication that the BigX wish to carry out joint audits together.

Francis et al. (2009) examine (i) the effect of ownership structure (a measure of information asymmetry and hence agency costs) on auditor-pair choices and (ii) the impact of this choice on earnings quality (measured by abnormal accruals). It is found that more diversified outside ownership structures are associated with the increased likelihood of two Big4 auditors and this results in higher earnings quality. These findings are slightly weaker for a Big4/non-Big4 pair.

2.8 Concentration[10]

In countries and time periods where audit fees are not required to be disclosed, concentration measures use company size as a surrogate measure. This is a large body of literature, using archival methods. There are a few modelling studies.

There are three principal sources of change in concentration: change in the set of consumers; change in the set of providers; and realignments (switches). Change in the set of consumers results from companies entering or exiting the market through initial public offerings, mergers, insolvencies, delisting, re-admission and temporary suspension (Beattie et al., 2003). Change in the set of suppliers arises from audit firm merger or demise and new entrants. Mergers and acquisitions enable audit firms to expand their business to achieve greater economies of scale and also industry-specific expertise. Voluntary realignments are said to occur where companies initiate the auditor change. Audit firm resignations are uncommon and signal forced change for the client company. Auditor change is considered in the next section (section 2.9).

The number of audit firms active in the market has been used as an indicator of market structure. The two concentration measures reported in most prior studies are the *k*-firm concentration ratio (CR) and, less commonly, the Hirschman-Herfindahl index (HHI). These measures are based on either number of audits or audit fees.

The demise or merger of large audit firms is popularly thought to increase market concentration. Interestingly, however, neither Comunale and Sexton (2003) nor Duxbury et al. (2007) produce this result using Markov chain modelling in relation to the PricewaterhouseCoopers merger. Further, based on EU data, Ballas (2005) did not find that concentration increased following Andersen's demise. Evidence from audit market concentration studies suggests that increased market concentration does not necessarily decrease competition. For instance, while the merger between Price Waterhouse and Coopers & Lybrand increased the Big 5 market share at the aggregate market level, Thavapalan et al. (2002) report that, for a number of industry sectors in Australia, a more equitable spread of audit clients between the Big 5 firms was achieved.

US studies

In a study published in an economics journal, Feldman (2006) examines the impact of Andersen's exit on concentration and audit fees. Concentration and fees both increased significantly, consistent with the exercise of market power. Cahen et al. (2008) find that US auditor *industry* concentration relates positively to both the level and homogeneity of the industry investment opportunities (measured using growth options).

UK studies

McMeeking (2007) studies concentration and fee levels over the period 1990-2005, when the Big8 became the Big4. It is found that the BigN responded to saturation in the FTSE100 market by targeting smaller companies. The market is competitive at the initial tender stage, but concentration has permitted audit fees to rise significantly on repeat engagements. Ding and Jia (2012) report on the impact of the Price Waterhouse/Coopers & Lybrand merger in 1998, reporting that both quality and audit fees of the BigN post-

[10] This section draws upon the discussion in Abidin et al. (2010)

merger increased. The latter finding suggests that enhanced market power dominated cost savings.

The UK Department of Trade and Industry/Financial Reporting Council jointly commissioned a report on competition and choice in the UK audit market (Oxera, 2006). This report's analysis of concentration focuses on CR1, CR4 and the HHI for listed companies including the Alternative Investment Market (AIM), using the Datastream database. Based on audit fees in 2005 (n = 676), CR1 for main market companies was 30.2%, CR4 was 92.3% and HHI was 2,236. CR1 for AIM companies (n = 979) was 13.4%, CR4 was 38.7% and HHI was 892 (p.61). Fewer companies were included in the Oxera panel dataset which covered the period 1995-2004 and included only those 676 companies listed on the main market for which all necessary data was available on the FAME database.

Most recently, Abidin et al. (2010) present evidence on audit market concentration and auditor fee levels in the UK market in the crucial period of structural change following the PricewaterhouseCoopers' (PwC) merger and encompassing Andersen's demise (1998-2003). The study considers all domestic listed companies on both the main and AIM markets, which covered 1607 companies in 1998, falling to 1386 companies in 2003. Analysis at the individual audit firm level shows that the Big4 became more closely aligned in terms of market share following Andersen's demise, but that the gap between them and the leading mid-tier forms became wider over the period. A decomposition analysis of the aggregate Big 5/4 concentration ratio changes over the period identifies the impact of four distinct consumer-based reasons for change: leavers; net joiners; non-par auditor switches; and (only for the audit fees measure) audit fee changes.

Analysis of concentration (based on audit fees) across 34 industry sectors in 2003 shows PwC to be the market leader in 18 industries. Twenty sectors had a market leader with a share in excess of 50%. In eleven sectors, one or more mid-tier firms held ≥2% audit fees and in nine sectors a mid-tier firm's market share exceeded that of one of the Big4. There is evidence of significant upward pressure on audit fees since 2001 but only for smaller auditees. Audit fee income for top tier auditors (Big 5/4) did not change significantly while the number of auditees fell significantly, consistent with a move towards larger, less risky, clients. PwC retained its position as a 'dominant firm'. On switching to the new auditor, former Andersen clients experienced an initial audit fee rise broadly in line with inflation, with no evidence of fee premia or discounting. They also reported significantly lower NAS fees, consistent with audit firms and auditees responding to public concerns about perceptions of auditor independence. There is no general evidence of knowledge spillover effects or cross-subsidisation of the audit fee by NAS. The combined findings provide no evidence to indicate that recent structural changes have resulted in anticompetitive pricing; the key concerns remain the lack of audit firm choice and issues concerning the governance and accountability of audit firm. The study contains a summary of prior UK concentration studies.

2.9 Switching and tendering

In conceptualising the auditor choice process it is important to recognise that auditor choice emerges from the client's characteristics, potential auditors' characteristics and the auditing environment. A significant change in one (or more) of these three areas is required for a client to decide to change their auditor, since the costs of switching are material. The auditor change process is usefully separated into two stages, as suggested by Francis and Wilson

(1988), since the reasons for displacement of the former auditor might be unrelated to the specific choice criteria used in selecting the new auditor. Companies first decide to change auditors and then make a reselection. Auditor displacement may be motivated by a change in company circumstances (i.e. by factors unconnected with the current audit firm's performance) such as a change in top management or by specific problems and disagreements. The reasons for change are, therefore, *not necessarily* related to generic audit firm characteristics and also *not necessarily* involved in the choice of a new auditor. Although there exists a *common* set of factors underlying change and choice decisions, both decisions also have unique factors.[11]

Empirical work has mainly been directed towards auditor selection (i.e. the second stage of the auditor change process) and generally seeks to explain (using archival methods) shifts in quality between the incumbent and new auditor (e.g. Francis and Wilson, 1988; Johnson and Lys; 1990; DeFond, 1992). A subset of this literature examines auditor selection in the IPO context, where it has been found that the selection of a BigN audit firm reduces the extent of underpricing. Further, issues handled by leading investment banks are more likely to have a BigN firm (for details see Moizer, 1997). Research on auditor change (the first part of the process) has received less attention but includes both survey and archival studies.

Survey studies mainly cover the US audit market but some focus on the UK. Beattie and Fearnley (1998a) elicit Finance Directors' perceptions of the factors that influence auditor switches using a postal questionnaire. These studies generally report audit fee and service quality as the main reasons for change. Thus, both economic and behavioural factors are important influences. Beattie and Fearnley (1998b) report that 55% of auditor changes were effected via an audit tender; unsolicited approaches were relatively common. Beattie and Fearnley (1998c) interview the Finance Director of twelve companies that had conducted a competitive tender, changed auditor or both between the 1989 and 1992, to investigate the change process, drawing upon tender theory in the economics literature. Findings reveal the influence of price versus non-price competition within the external audit market. The three principal dimensions of non-price competition were: audit quality, quality of NAS, and quality of working relationships. The relative importance of each dimension, and each form of competition, was found to vary across companies. High fees were a contributing reason for change in only two cases and in only one case influenced the final choice of new audit firm.

Archival studies typically use multivariate logistic regression to explore the association between the dichotomous change/no change decision variable and potential predictor variables (e.g. *US*: Landsman et al., 2009; Blouin et al., 2007; *UK*: Lennox, 2000; Hudaib and Cooke, 2005). They have examined a range of factors that might trigger an auditor change decision including agency variables, corporate governance characteristics, top management changes, opinion shopping and client risk. Lennox (2000) focuses on opinion shopping over the 1988-94 period. Hudaib and Cooke (2005) consider the impact of top management changes, financial distress and audit opinions on auditor change during 1987-2001.

Auditors may resign from client engagements to reduce their risk exposure. These risks are of three types: (i) risks associated with a client's business risk (also sometimes called financial risk), which is the risk that the client's economic condition will deteriorate in

[11] This section draws upon the discussion in Beattie and Fearnley (1995).

either the short or long term; (ii) audit risk whereby an auditor may unknowingly fail to modify an audit opinion on materially misstated financial statements; and (iii) auditor business risk, which is the likelihood that an auditor makes a loss on a particular audit engagement through failure to cover operating costs or through litigation, either directly or as a result of reputational loss (Johnstone, 2000; Johnstone and Bedard, 2004). A second explanation for auditor resignations suggests that changes in the audit industry alter the relative cost/benefit relationship for clients, encouraging auditors to re-balance their client portfolio. Changes in audit technology and in the demand for, and profitability of, consultancy work may lead to changes in the optimal client mix for an audit firm (Landsman et al., 2009).

In the UK, genuine audit firm resignations are unusual. Moizer and Porter (2004) report that 48% of their sample of 609 auditor changes were apparently auditor resignations, as evidenced by letters filed with the company registrar. However, during interviews, audit partners argued that 'genuine mid-term resignations are very rare', with most resignations resulted from the practice of putting audits out to tender, and when a new auditor is appointed the existing auditor 'resigns'. Unfortunately, such evidence means that analysis of auditor changes in the UK between client-initiated and auditor-initiated (resignations) is likely to be invalid and to lead to spurious conclusions.

Stefaniak et al. (2009) provides a fairly recent synthesis of the (mainly US) auditor switching literature. They conclude that: (i) audit firms initially low-ball audit fees to attract prospective clients, although this reduction is temporary; (ii) clients attempt to opinion-shop following qualified opinions; (iii) the costs of mandatory audit firm rotation (which include a decline in audit quality) outweigh the benefits; (iv) auditor change generally results in negative share price reaction; and (v) auditor change disclosures, although rather boilerplate, appear to provide useful information to capital market participants.

Studies that examine switching in relation to the Andersen event (initially voluntary and, upon Andersen's demise, forced switches) were considered above in section 2.3, which dealt with auditor reputation.

2.10 Audit inspection regimes

This section considers the literature from the US and UK on the effect of audit inspection regimes (e.g. the AIU in the UK and the PCAOB in the US) on audit quality. Virtually all research in this area is US-based, looking at the PCAOB inspection regime which was established by the Sarbanes-Oxley Act (2002).[12] There are a manageable number of papers to consider.

In many countries, systems of audit firm review and inspection have changed significantly in recent years. From 1988 until 2002, audit firms operating in the US with SEC clients were subject to mandatory peer review every three years, with the results of this review being publicly disclosed. Hilary and Lennox (2005) find that audit firms gained clients following receipt of a clean opinion and lost clients following receipt of an adverse opinion, suggesting that the process credibly signaled audit quality, a conclusion confirmed by Casterella et al. (2009).

[12] This regime replaced an AICPA-sponsored peer review system, which was less independent.

Following SOX, this model was replaced by independent inspections carried out by the PCAOB. Lennox and Pittman (2010) find that audit firms' market shares are not sensitive to these reports, suggesting that the new regulatory regime is not viewed as an effective signal of audit quality. This may be because the inspectors are not seen to possess adequate technical knowledge and/or because the PCAOB reports are less informative that the peer review reports (as they do not disclose quality control problems). However, as DeFond (2010) rightly points out, this conclusion must be tempered by consideration of several related issues: (i) a lack of information value does not necessarily mean that the inspections are ineffective; (ii) the new regime may be effective in providing ex ante incentives for audit quality to improve, by applying stricter standards and/or imposing more severe penalties; (iii) the quality of financial reporting may have improved post SOX.

By contrast, Daugherty et al. (2011) do find that audit firms experiencing deficient PCAOB reports do lose clients (who go to firms with clean reports) and tend to voluntarily exit the publicly traded client market, suggesting that the costs of regulatory compliance are considered too high to the audit rewards. In the Dutch setting, Van de Poel et al. (2009) conclude that independent inspections are effective in detecting audit quality.

Carcello et al. (2011a) find that the inspection process has led to improved audit quality (measured by a reduction in abnormal accruals). Gramling et al (2011) find that audit firms with PCAOB deficiencies were more likely to issue a going-concern opinion for financially distressed clients subsequent to the inspection compared to prior to the inspection.

2.11 Impact of audit characteristics on cost of capital and share prices

2.11.1 Cost of capital

In a study of the impact of audit tenure, Boone et al. (2008) proxy investors' perceptions of audit quality using the ex ante equity risk premium (the company cost of equity capital minus the risk-free rate of interest). They find that the premium falls in the early years of tenure (indicating higher perceived audit quality consistent with learning effects), and rises thereafter (consistent with independence impairment) (US study). Mansi et al. (2004) finds that longer tenure is associated with a lower cost of debt (US study).

This approach has also been used to examine perception of audit quality of BigN versus non BigN. Azizkhani et al. (2010) find that the ex ante cost of capital is lower for Big4 audits up to 2001, but not after the financial scandals, indicating that the these events eroded perceptions of audit quality differences between Big4 and non-Big4 firms. In a working paper that uses a similar approach, Cassell et al. (2011) conclude that the financial reporting credibility of clients of mid-tier firms was lower than for Big4 in the six years pre-SOX, but similar in the six years post-SOX (US study). However Boone et al. (2010) find that, for the period 2003-6, the ex ante equity risk premium (a proxy for perceived audit quality) was lower for Big4 clients than for non-Big4 clients, indicating that quality differences persisted after the scandals.

2.11.2 Share price reaction

Investors' perception of various audit-related events has been extensively investigated in event studies which document the market reaction to a particular occurrence. For example, Krishnamurthy et al. (2006) examine abnormal market returns for Andersen clients around the indictment announcement (US study). The negative share price reaction was more severe when Andersen supplied more non-audit services (proxy for independence). Cahen et al. (2009) conclude that the reputations of the BigN really are international. They find a significant, negative share price reaction of Andersen's non-US clients to key dates surrounding the scandal, more significant in common law countries where there is a greater demand for assurance. In their synthesis of the (mainly US) auditor switching literature, Stefaniak et al. (2009) conclude that auditor change generally results in negative share price reaction.

Sanctions are a more serious outcome from the PCAOB inspection process than deficient reports. Dee et al. (2011) investigate the stock market reaction to the PCAOB's 2007 sanctions against Deloitte and Touche in relation to its audit of Ligand Pharmaceuticals Inc in 2003. This event represented the first time that sanctions had been imposed. They find a significantly negative market reaction to the news for Deloitte clients, but not for non-Deloitte clients, suggesting that the sanctions reveal value-relevant information about Deloitte's reputation or insurance value (i.e. the funds available in the event of litigation – the so-called 'deep pockets' characteristic). This supports the view of Lennox and Pittman (2010) that clients value disclosures about audit firm internal control weaknesses.

2.12 Client acceptance decisions

Studies can usefully be divided into pre- and post Enron/Andersen studies, as this event represented a structural shift in the perceptions and behaviour of interested parties. The literature in this area is manageable in size and mainly US-based. The methods used are archival, experimental and proprietary data.

Interest revolves around the relative importance of audit risk and financial risk in the decision. Audit risk is the risk that the auditor may unknowingly fail to appropriately modify his opinion on financial statements that are materially misstated. It is influenced by factors such as internal controls, the quality of financial reporting and management integrity. Financial risk (also known as client business risk) is the risk that a potential client's economic condition deteriorates. Both of these elements of risk affect the risk of litigation against the audit firm, although litigation associated with fraud events are more common and more damaging to auditor reputation. Archival methods permit only financial risk factors to be considered, whereas the use of proprietary data permits audit risk factors to be considered also.

2.12.1 Pre-Enron

Johnstone (2000) found that client acceptance decisions in one Big6 US audit firm were influences by industry expertise (reflecting professionalism) and the potential for NAS provision (reflecting commercialism). Johnstone and Bedard (2003) use proprietary data (from 1997-98) from a Big6 US firm's client acceptance database to test a proposed conceptual model of the client acceptance decision process. This conceptual model involves the evaluation of client risk/return and then consideration of potential risk management strategies. It is found (using logistic regression of the proposed model) that, while risky clients are less likely to be accepted overall, the application of risk management strategies (such as higher billing rate and assignment of specialist staff) increases the likelihood of acceptance. Based on proprietary data from 2000-01 for a large US audit firm, Johnstone and Bedard (2004) find that the firm is shedding its riskier clients. Risk exposures affect both discontinuance and new client acceptance decisions, but it is primarily client audit risk rather than business/financial risk that drives the decision. There is no evidence that audit pricing affect the decisions (i.e. anticipated fees cover the risk management and residual risk exposure).

In a field study involving three Big6 Canadian audit firms, Gendron (2001; 2002) explores the *process* of decision-making. Through mainly interviews, he considers the extent to which firm acceptance decision policies drive the decision outcome. He finds the decision to be quite flexible. The policies varied in terms of the emphasis on professionalism versus commercialism – two firms emphasised professionalism while one emphasised commercialism. Formal organisational components such as partner compensation schemes, supported the audit firm's chosen stance.

2.12.2 Post-Enron

From a preliminary search, I have not identified any studies using post-Enron/Andersen data of the type described above. Giroux and Cassell (2011) document the changing contextual influences on audit in the US over the last 40 years. These influences include economic cycles, technological changes and regulatory changes as well as key events. This is correlated with measures of audit risk: earnings management risk; client financial risk and litigation risk. Cyclical patterns of relative audit risk are found to parallel contextual changes.

2.13 Corporate governance and institutional investors

This section considers the effectiveness of corporate governance (hereafter CG) and the role of institutional investors in monitoring the decisions of the board/audit committee. Shleifer and Vishny (1997) review early CG research from a finance perspective, i.e. an agency perspective. Durisin and Puzone (2009), Brown et al. (2011), Carcello et al. (2011b) and Lin and Hwang (2010) provide more up-to-date reviews of CG research in the accounting and auditing fields. Bédard and Gendron (2010) offer a review of the effectiveness of ACs in particular.

Carcello et al. (2011b) sum up the findings from over 250 studies as follows 'generally speaking, 'good' audit committee and board characteristics are associated with measures of 'good' accounting and auditing and with more effective internal controls' (p.3). Lin and Hwang (2010) conduct a meta-analysis of 48 studies linking audit quality (measured by earnings management) and corporate governance characteristics. They conclude that strong corporate governance (board and audit committee independence and expertise, and audit committee size and meeting frequency) reduces earnings management.

2.13.1 CG and institutional investors

To date, the dominant theory underpinning corporate governance research is agency theory. Roberts et al. (2005) and Hendry et al. (2007a, b) challenge this perspective. Henry et al. (2007a, b) conduct an interview-based study of UK institutional investors and managers to explore conceptions of their role and monitoring and engagement activity. Agency conceptions are minimal in the accounts obtained. It should be noted, however, that this study is not focussed specifically on audit. Christopher (2010) argues that three management-based theories (stakeholder theory, stewardship theory and resource dependency theory) should be integrated with agency theory to provide a richer understanding of the influences on organisations. Agency theory assumes individualistic, self-serving behaviour by managers; the behavioural assumption under stewardship theory is that more collectivist behaviour results in higher managerial utility (Davis et al., 1997). Carcello et al. (2011b) also argue for theories from psychology and sociology to be applied to CG.

There is a considerable literature on corporate governance and the role of institutional investors, many of a discursive, logical argument nature. A recurring theme is criticism of the regulatory exhortation (e.g. Hampel Report in the UK) for institutional shareholders to lead shareholder activism (e.g. Webb et al., 2003). In the Anglo-Saxon CG setting of the UK, 80% of equity is owned by institutional investors (pension funds, insurance companies). They are a heterogenous group, ranging from relationship investors who will engage with companies over the long term to short term fund managers who 'churn' and rebalance their portfolios to meet specific investment rules/benchmarks. Hence their trading motivations vary and divestment does not necessarily signal dissatisfaction (Lysandrou and Stoyanova, 2007). Further, the accountability of institutional investors themselves is being called into question, as it is being realized that there are inherent conflicts of interest between the fund managers and the underlying shareholders and other shareholders (Tricker, 1998; Ingley and van der Walt, 2004).

2.13.2 Audit committees

The literature on audit committee (hereafter AC) effectiveness does not intersect with the literature on institutional investors. DeZoort et al. (2002) and Turley and Zaman (2004) review the CG effects of audit committees in particular. It is noted that most research is of the input-output design, examining the relationship between AC characteristics (such as proportion of independent directors, meeting frequency, and presence of a financial expert) and financial statement and audit outcomes. There is acknowledged to be a need for more non-archival research that addresses AC processes. The up-to-date review by Carcello et al (2011b) lists the following findings (from archival, US studies) connected with AC member expertise:

1. positively associated with accruals quality
2. positively associated with shareholder votes for the auditor
3. positively associated with companies with higher litigation risk and stronger governance
4. negatively associated with audit fees (if governance is strong)
5. negatively associated with auditor resignations.

These findings indicate the effectiveness of expert AC members. The presence and independence of ACs have also generally been shown to be effective in strengthening the financial reporting system; whereas AC size and meeting frequency have no impact (Bédard and Gendron, 2010). Keune and Johnstone (2011) use data on detected misstatements between 2003 and 2006[13] to show that ACs with greater financial expertise are less likely to allow managers to waive material misstatements compared to ACs with less expertise (US study).

Interview studies of AC processes are relatively rare. Gendron and Bedard (2006) take a social constructivist approach to AC behavior, arguing that AC effectiveness is internally developed and sustained within the committee itself. Beasley et al. (2009) interview 42 US AC members. They find evidence of both substantive monitoring (consistent with agency theory) and ceremonial action (consistent with institutional theory), with considerable variation between companies. 57% of interviewees claimed to be involved in discussion of the specific judgments/estimates/assumptions concerned with implementing an accounting policy and 67% discussed alternative accounting treatments

[13] Regulation in 2006 required disclosure of detected misstatements that were previously judged immaterial and not corrected in the financial statements (Staff Accounting Bulletin No. 108, issued by the SEC).

available under GAAP. AC members with accounting expertise were significantly more likely to engage in discussion of accounting issues.

Cohen et al. (2008) interview 30 audit managers and partners from three of the Big 4 audit firms in the US, comparing the findings with a similar pre-SOX study (Cohen et al., 2002). ACs are believed to have become significantly more active and diligent, and to possess greater expertise and power, but may play a more passive role in resolving financial reporting disputes expecting the auditors and management to resolve the issues. They conclude that the AC's role has changed from being symbolic to being an effective monitor of a company's financial reporting process.

In the UK, Turley and Zaman (2007) examine interactions among key corporate governance actors using interviews to explore both formal and informal AC processes. They conclude that: (i) the most significant effects of the AC on governance outcomes occur outside the formal AC structures and processes; (ii) the AC has a significant influence on power relations between key organizational participants; and (iii) the AC may be used as a threat, ally or arbiter in resolving issues and conflicts. The interview study by Beattie et al. (2011b), covered in section 2.2 above, looks specifically at the role of the committee in interactions.

In terms of limitations, Carcello *et al.* (2011b) note that endogeneity is a major problem in CG research, since governance characteristics and outcomes of interest are likely to be affected by the same variables.

2.14 Other research areas of potential interest to CC

There exist a few studies which examine the regulation of the accounting/auditing profession/industry, at the national and international level. These studies explore the changing financial regulatory landscape and some adopt a critical approach drawing upon theories of power (e.g. Humphrey et al., 2009; Malsch and Gendron, 2011). Also of a more critical nature are studies that explore the nature of audit from a behavioural, organisational and/or social theory perspective, where the notions of comfort, trust and professionalism in relation to audit are explored. (e.g. Suddaby et al., 2009; Carrington, 2010).

Another area of possible interest is the concept of professional scepticism, which relates to audit quality. Auditor scepticism is an individual-level attribute. Recently, concern has been expressed by regulators that auditors are not sufficiently sceptical. This is a difficult concept to investigate empirically. Nelson (2009) offers a model and literature review of this area.

How 'real' are the loose affiliations in Big4 international networks? I have not uncovered any research on this particular topic but it may be an issue worth considering.

3. Concluding remarks

Audit processes constantly evolve. Since the 1970s, auditors have relied upon the audit risk model to understand the different components of audit risk. Audit risk is the possibility that the auditor will issue an inappropriate opinion on materially misstated financial statements. Audit risk comprises: inherent risk (the risk of material misstatement in the absence of internal controls); control risk (the risk that a misstatement will not be prevented or detected by internal controls); and detection risk (the risk that the auditor will not detect misstatements). The 1990s saw a shift towards business risk auditing (BRA), which involved greater focus on business risk understanding in the assessment of audit risk and audit planning and less detailed procedures. Proponents argue that this change was justified given the changes in the business environment (the knowledge economy) (Peecher et al., 2007). More critical accounts of this change see it is part of the accounting profession's attempt to stake a claim over the growing market for strategy, risk and assurance advisory markets (Power, 2007; Robson et al., 2007).

This literature review is by no means a comprehensive coverage of the vast academic literature that exists on the topics selected for review. This initial literature review has sought, within the time constraints imposed, to present an overview of research in each area, identifying recent review articles and focussing on the more recent research. Further, some of the subtleties and nuances of the research which has been covered is glossed over.

In addition to the general limitation discussed in section 1.4 above, it should be recognised that the changing audit environment may well invalidate the findings from early studies. Changes include: technology within the audit firm: the changing nature of business (i.e. knowledge-economy), which changes the type of balances to be audited; financial regulation; economic climate; and social beliefs. In terms of regulatory change, covered in section 1.5 above, it is worth emphasising that audit quality is influenced by the accounting standards and their enforcement mechanisms. As documented by Beattie et al. (2011b), listed UK companies follow IFRS under a strong national enforcement regime (for both accounting and auditing) making it very difficult for AEPs of lesser quality to operate in the current environment, but also for the 'crusader' to thrive.

The applicability of findings from one country setting to another are unclear. Countries vary significantly in their institutional context. Leuz (2010) offers an interesting analysis of the different approaches to corporate reporting regulation, identifying institutional country clusters covering 49 countries based on 13 institutional characteristics. He argues that global convergence is unlikely due to these institutional differences and enforcement differences.

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