Study on the Economic Impact of Auditors' Liability Regimes (MARKT/2005/24/F)

Final Report

To

EC-DG Internal Market and Services

By

London Economics in association with Professor Ralf Ewert, Goethe University, Frankfurt am Main, Germany

September 2006

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List of Acronyms

Country acronyms

AT	Austria
BE	Belgium
CZ	Czech Republic
CY	Cyprus
DK	Denmark
DE	Germany
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
IE	Ireland
IT	Italy
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
PL	Poland
PT	Portugal
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom

Other Acronyms

EU25	European Union of 25 Member States
FEE	The European Federation Of Accountants
FRC	The Financial Reporting Council (UK)
GAO	United States General Accounting Office
IMA	Investment Management Association
ICAEW	Institute of Chartered Accountants of England & Wales

LIBA	London Investment Banking Association
LE	London Economics
NACE	General Industrial Classification of Economic Activities within the European Communities

Key conclusions

- The present study, which focuses on the economic impact of the auditors' liability for statutory audits, shows that the market for statutory audits of large and very large companies is highly concentrated and dominated by the Big-4 networks. Moreover, the structure of this market is unlikely to change much in the coming years.

- This is because middle-tier firms face a number of barriers to entry into the market. Such barriers are reputation, capacity and breadth of their networks, and the exposure to unlimited liability in most Member States combined with very limited professional insurance availability.

- As a result, over the foreseeable future, middle-tier networks are unlikely to become a major alternative to the Big-4 networks or a substitute for a failed Big-4 network.

- The level of auditor liability insurance available for higher limits from the commercial market has fallen sharply in recent years in terms of both the level and amount of insurance, and the conditions under which the insurance cover is effective. The current level of commercial insurance is such that it would cover less than 5% of the larger claims some firms face nowadays in some EU Member States.

- At the present time, firms in the EU face 11 claims in the range of €160 million to €785 million (U.S. $200 million to U.S. $1 billion) and 5 claims in excess of €785 million (U.S. $1 billion).

- Moreover, the price of that insurance has risen sharply, doubling over the last five years in the case of the reinsurance provided to the captives of the Big-4 networks.

- Thus, the risk of a large award or settlement that Big-4 firms would have to assume themselves, either directly or though their captives, has increased substantially in recent years.

- Once a firm has exhausted the limited cover provided by the network's captive and commercial insurers, the remaining source of funds is essentially the partners' income. At issue then for a firm is how large an income cut partners would be willing to take before leaving the firm in drove, resulting in the collapse of the firm. In cases where the survival of

a firm, considered to be a linchpin of a network, is at a risk because of a large claim against it, partners of other firms in the network may need to assist financially the threatened firm to ensure the survival of the network.

- The profession is already viewed as not very attractive and risky, and, in their replies to the survey, audit firms have indicated that unlimited liability makes it more difficult to retain professional staff with a view to becoming partners. A major claim that threatens the survival of a firm would simply reinforce the negative perceptions about the profession.

- To put this risk in perspective, it is estimated that the largest single claim the largest firm in Europe could sustain over a certain period (4 or 5 years) once the resources of the network's captive are exhausted is about €540 million, or less than 0.3% of the market capitalisation of the largest UK company by market size and just under 0.25% of the turnover of the largest UK company by turnover.

- In light of the number of large actual or potential claims outstanding, the risk of an award or settlement in excess of the tipping threshold is far from nil, and one of the major Big-4 networks could possibly fail as a result.

- The adjustment to a situation in which one of the Big-4 networks fails is unlikely to be smooth. But, the long run consequences are likely to be limited provided the overall statutory audit capacity does not fall significantly. Among the various economic sectors, financial institutions may find such a situation particularly difficult as their statutory audits are viewed as more risky and require special expertise and skills which, in the whole, only Big-4 firms have. In this regard it is noteworthy that, in some EU Member States, two Big-4 firms dominate the market for statutory audits of financial institutions.

- The situation is likely to be much direr if a second Big-4 network fails shortly after the first one. Investors' confidence will be in all likelihood seriously affected and the adjustment to the new situation is likely to be difficult, especially if statutory audit capacity shrinks as result of these events.

- A limitation on auditor liability would reduce risk caused by potential catastrophic claims.

- A small number of EU Member States (Austria, Belgium, Germany, Greece and Slovenia) have a statutory limitation on auditors' liability and in the U.K. a bill currently reviewed by Parliament foresees proportional liability by contract.

- While there exists a number of variants of a statutory audit liability limitation, the diversity of circumstances in terms of both audits and company size is such that it is unlikely that a one-size-fits-all EU-wide approach is the most useful.

- The key issue in terms of reduced risk for audit firms and increased competition by the audit firms is not so much the precise form of the limitation as the level of liability that firms face in a regime in which auditors' liability is limited.

- A relatively high limit may be appropriate for the Big-4 firms as it serves as a potential incentive to focus on audit quality but may not result in significant entry of middle-tier firms into the audit market served by Big-4 firms.

- Conversely, a liability limit which is low enough to encourage middle-tier firms to audit larger companies may not provide the appropriate incentives to the Big-4 firms.

- Finally, in a regime of joint and several liability, any statutory audit liability limitation will help address the "deep pocket" syndrome whereby the audit firm is typically viewed by plaintiffs as having the largest resources and is therefore the target of complaints irrespective of the contribution and responsibility of the firm to the event giving rise to the complaint.

Executive Summary

To allow the reader to find easily the sections in the main body of the report corresponding to the various parts of the executive summary, cross-references to these sections are provided below in the executive summary.

Introduction (Section 1, pp. 1 to 13)

- Under the 17 May 2006 Directive[1] of the European Parliament and the European Council on the statutory audit of annual accounts and consolidated accounts and amending Council Directives 78/660/EC and 83/349/EEC (8th Company Law Directive), the European Commission is to table before 1st January 2007 a report on:

  "*The impact of the current liability rules for carrying out statutory audits on the European capital markets and on the insurance conditions for statutory auditors and audit firms, including an objective analysis of the limitations of financial liability*." (see p. 1 of report)

- The purpose of the present study is to assist the European Commission in its preparation of the report, and the specific issues to be addressed by the study are the following:

- An analysis of the economic impact of potential auditor liability regimes, including a review of the market as it stands at the present time;

- An assessment of the likely effects if one or more of the Big-4 firms were to disappear;

- An evaluation of the impact of imposing alternative liability regimes; and

- An analysis of the auditor liability insurance market (see p. 2 of report).

- In terms of the scope of the study, the terms of reference specified that the focus is on statutory audit services provided to companies, mainly those listed on a regulated market within the meaning of MiFID (see page 2 of report).

[1] Directive 2006/43/EC.

- The study takes as given the current legal and regulatory framework governing audit activities by audit firms. This framework is undergoing changes in a number of Member States and these are no yet reflected in the data reported in the present study (see p. 2 of the report).

- The information presented in this report comes from a wide range of sources: academic literature, reports and studies from governments and regulators, surveys of audit firms, companies and institutional investors, interviews of a number of representatives of audit firm networks, auditor organisations, the insurance sector, annual reports of companies, and databanks such as Amadeus from Bureau Van Dijk and Bloomberg (see p. 4 of the report).

Part I: The State of the International Market for Audit Firms in the EU (Sections 2 to 11, pp.15 to 71)

Patterns of concentration of the audit market (Section 3, p. 16)

- Our analysis of concentration of the statutory audit market in the EU25 focuses on three market segments, namely the domestic companies included in the main index of the stock exchange, all domestic companies listed on the regulated market of the stock exchange and all companies for which information on the auditor is available in the Amadeus databank (see p. 17 of the report)

- The market shares of the four largest audit firms (C4) and the Herfindahl-Hirschman Index (HHI) are the two concentration indicators used predominantly in the study to assess the degree of concentration in the segment of the statutory audit market (see p. 18 of the report).

- As, in many Member States, information on audit fees paid by companies is not available, we use both the number of audit mandates and the size of the companies being audited as proxies for audit fees. Concentration estimates based on the size of companies give implicitly a greater weight to larger companies. Thus, any divergence between the concentration figures based on the two types of metric will reflect the greater role played by middle-tier firms in providing audit services to medium-sized and smaller listed companies (see p. 18 of the report).

- In 2004, in all but two Member States, the C4 figure for the market including only the companies of the main stock exchange index ranges from 83 to 100 and in fourteen of these countries, the C4 figure ranges

from 90 to 100 (see p. 19 of the report).

- In all cases, with the exception of Denmark and France, the computed HHIs exceed, often by a significant margin, the threshold typically giving rise to concerns about the level of concentration in the marketplace (see p. 19 of the report).

- The market for statutory audit services to all listed companies on the regulated markets of the national stock exchanges is somewhat less concentrated when one focuses on the number of mandates. In a number of cases such as Belgium, the Czech Republic, Denmark, Germany, Greece, France, Hungary, Latvia and Poland, the C4 measure is below 70. The HHI is also below the "concentration concern" threshold in these countries as well as in Ireland, Lithuania and Luxembourg (see p. 21 of the report).

- However, when concentration is measured on the basis of the size of companies, concentration remains high and, in 2004, in all but three countries, the HHI was above the "concentration concern" threshold level (see p. 21 of the report).

- A similar difference between concentration figures based on the number of audit mandates and the concentration figures based on the size of companies is observed when the market is extended to include all public companies (see p. 24 and p. 26 of the report).

- The bottom line is that the market segment of the provision of audit services to large companies is highly concentrated and dominated by the Big-4 firms throughout the EU25 (see p. 26 of the report).

- The concentration of the market for statutory audit services was already high a number of years ago. But, mergers among the major audit firm networks over the last 20 years have contributed to significantly increase the level of concentration, and this was exacerbated by the demise of Arthur Andersen (see p. 28 of the report).

Specialisation of the Big-4 networks (Section 4, p. 31)

- In some EU Member States, the market for statutory audits of large companies appears to be further segmented in that, across the EU25, the Big-4 hold practically 90% of the audit mandates of all banks and insurance companies listed on the regulated markets of the stock

exchanges while they hold only slightly more than 2/3 of all the audit mandates of companies (other than banks and insurance companies) listed on the regulated markets (see p. 31 of the report).

Factors which have contributed to the current patterns of concentration (Section 5, p. 33)

- A number of reasons have contributed to the consolidation among the larger networks. Obviously, the mergers of some of the larger networks and the demise of Arthur Andersen were significant factors (see p. 28 of the report).

- But, underlying the drive towards consolidation among the larger networks were globalisation and the growing geographical spreads of clients, technological innovations in the auditing profession in combination with a lack of access to external capital and the need to develop deeper industry and technical expertise (see p. 33 of the report).

- To shed light on why the concentrated statutory audit industry structure persists, audit firms and companies were asked to provide their views on the dimensions on which audit firms compete and factors having contributed to the current state of concentration (see p. 35 of the report).

- While a number of aspects affect the competitiveness of their offerings, Big-4 firms essentially compete against each other on price as their broader characteristics and attributes are very similar. Obviously, individual mandates will be won and retained on the basis of factors such as the quality, expertise and experience of the proposed audit team and engagement partners (see p. 35 of the report).

- In contrast, the middle-tier firms view reputation as the key competition driver in the market for statutory audit services to larger, listed companies. Next come price, quality in terms of reliability and capacity (see p. 35 of the report).

- While a number of factors are said to have contributed to the current state of concentration, "changing client needs" is viewed by audit firms and companies as the single most important factor. Other important factors are the disappearance of one of the major firm networks and the need to achieve economies of scale (see p. 37 of the report).

Barriers to entry into the audit market segment served by the Big-4 firms (Section 6, p. 40)

- Middle-tier firms face a number of barriers to entry into the statutory audit market served typically by the Big-4 firms. Some of these barriers are attitudinal and some are more structural (see p. 41 of the report).

- Foremost among these barriers is the attitudinal barrier related to reputation. The selection of a Big-4 firm is often viewed as "safer" because of the reputation of the Big-4 firms and easier to defend should a problem arise down the road (see p. 42 of the report).

- This attitudinal barrier is compounded by client inertia and only limited switching from one statutory auditor to another (see p. 43 of the report).

- Structural barriers which are more directly under the control of the middle-tier firms are their smaller capacity and geographical spread (see p. 41 of the report).

- These barriers are unlikely to be overcome in the very near term as the build-up of reputation, capacity and geographical spread take time and resources. That being said, a change in attitude from the larger corporate sector (and the institutional investors) may encourage some middle-tier networks to undertake the necessary investments to overcome the structural barriers (see p. 46 of the report).

- According to the survey results, the combination of unlimited auditor liability and very limited availability of professional indemnity insurance is not reported by middle-tier firms as being a major issue (see p. 46 of the report). However, this observation appears more likely to be related to the current statutory audit market served by middle-tier firms

- In follow-up discussions with some of the major middle-tier firms on the challenges faced by such firms in the market for statutory audits of large and very large companies, unlimited auditor liability combined with only very limited availability of liability insurance was stated as being a very important factor (see p. 46 of the report).

What factors determine a company's choice of auditor? (Section 7 p. 48)

- The survey results regarding the importance of various factors taken into account by companies in selecting an auditor confirm the previously reported survey results regarding competition in the market place and barriers to entry. Reputation is judged by both companies and audit firms to be the major factor. Other important factors, from the companies' perspective, are the geographical spread of the network and the company's previous experience with the firm (see p. 48 of the report).

Influence of various stakeholders on a company's choice of auditor (Section 8, p. 54)

- In terms of who exerts the strongest influence on the choice of auditor, as distinct from the body that formally appoints them, the Board's audit committee and the company's Finance Director were cited most frequently while, in the case of groups, the parent company is said to exert the strongest influence on the appointment(s) of auditor(s) at domestic and foreign subsidiaries (see p. 54 of the report).

- About a third of companies having responded to the survey indicated that shareholders have a strong influence on the choice of auditors. However, a majority of these companies also noted that there was one shareholder or a group of shareholders with a strong interest in the company (see p. 55 of the report).

- Shareholders, in particular institutional investors, may also have an indirect influence in the sense that they are perceived by large companies in some countries to have a preference for Big-4 audit firms. In countries such as the UK, institutional investors are currently working on changing such a perception (see p. 55 of the report).

What factors influence a company's decision to change auditor? (Section 9, p. 57)

- In practice, companies do not frequently change auditor. Indeed, more than half of the companies responding to the survey indicated that their auditor had served the company for more than 7 years (see p. 57 of the report).

- Of those companies which had changed their auditor, only 12% did so in

response to the demise of Arthur Andersen, and 85% simply switched from one Big-4 firm to another Big-4 firm, 13% switched from a middle-tier firm to a Big-4 firm and 2% switched from a Big-4 firm to a middle-tier firm (see p. 57 of the report).

- In general, the most frequent reason having led companies to change auditor is the appointment of a group auditor (see p. 57 of the report).

- In contrast, dissatisfaction with the quality of the audit work and the price of the audit services were not major reasons for changing auditor among the companies having actually changed auditor over the last ten years (see p. 57 of the report).

Mergers and acquisitions and collaboration among middle-tier networks as a mean to increase competition to the Big-4 networks (Section 10, p. 61)

- Mergers between middle-tier networks and/or the development of collaborative arrangements between such networks are sometimes viewed as a way for middle-tier networks to create a new global network similar in size and geographical reach to the Big-4 networks (see p. 61 of the report).

- However, the size gap between the Big-4 firms and the middle-tier firms is substantial and will not be easily closed. In many EU25 Member States, 3 or more of the largest middle-tier firms would have to merge or brought together in a collaborative arrangement to be similar in size to the smallest of the Big-4 firms in that country (see p. 61 of the report).

- The survey results suggest that, under the current legal framework for statutory audit activities, mergers and acquisitions within the middle-tier firm segment are unlikely to result in the near future in a new network that, in terms of size and geographical and product scope, could become a major challenger to the Big-4 networks (see p. 54 of the report).

- The survey findings raise doubts about the plausibility of mergers and acquisitions between middle-tier firms as a mean for increasing choice of service provider in the audit market for large companies. It also suggests that, in the near future, middle-tier networks, even merged or consolidated, are unlikely to be able to substitute for a Big-4 network should one of these networks fail. This point is discussed more extensively below (see p. 67 of the report).

- Nevertheless, mergers among middle-tier firms could help address to some extent some of the barriers to entry identified earlier and increase the attractiveness of their offer to companies, although not necessarily the very large ones (see p. 67 of the report).

- Overall, the audit firm survey results suggest that some limited consolidation of middle-tier firms may occur in a few countries over the coming years, in particular in Austria, Denmark, France, Luxembourg and the Netherlands (see p. 67 of the report).

- The key obstacles to a consolidation of the industry within the middle-tier segment are under the control of middle-tier firms as they relate to their partners' willingness to give up some independence and business influence, and to adapt and change the organisation of their activities. No or only few substantial regulatory and legal obstacles are said to exist (see p. 68 of the report).

Key Conclusions of Part I (Section 11, p. 71)

- Overall, the key conclusions which emerge from this first part of the study are that:

  - While the market for statutory audits is highly concentrated in the market of statutory audits of large companies, in many cases the middle-tier networks are not viewed at the present time as a real alternative to the Big-4 firms, both because of reputational reasons and perceived lack of breadth and depth in comparison to the Big-4 firms (see p. 74 of the report).

  - Middle-tier firms may make some inroads into the market dominated by the Big-4 but any gains are likely to be limited (see p. 74 of the report).

  - Moreover, because of significant differences in size between the Big-4 firms and the middle-tier firms, in many countries a merger between 3 or more middle-tier firms would have to occur to achieve a size similar to that of the smallest Big-4 firm. In some countries the prospects for some consolidation among middle-tier firms are said to be good but the consolidation is unlikely to be of the magnitude necessary to achieve a size comparable to that of the Big-4 firms (see 74 of the report).

Part II The Insurance Market for Statutory Audit (Sections 12 to 19, pp. 77 to p. 119)

Risks faced by firms (Section 13, p. 78)

- Firms face a range of claim sources. Some claims may originate from the firm's home country. Other claims may originate from abroad either because the client has a connection (such as a dual listing) linking it to foreign country, or the audit services were provided as part of the audit or group audit of a client domiciled in a foreign country (see p. 79 of the report).

- In addition, a firm may in the future also face a transnational risk from a claim filed against a network as a separate entity from its constituent members. At the present time it is not clear whether such a risk will effectively materialise as, so far, no court has found a network liable. However, this is an issue in two cases currently heard in the U.S. This may also become an issue under the 8th Company Law Directive which, for the first time at the EU level, introduces the formal concept of a network (see p. 80 of the report).

- In addition to potentially increasing the risk faced by the larger networks (Big-4, BDO and Grant Thornton), the possibility of such a risk may also deter middle-tier firms from establishing stronger networks than their current looser structures (see p. 80 of the report).

- Moreover, firms belonging to one of the major networks are also exposed to potential reputational damages arising from a claim against an affiliated firm in the network (see p. 81 of the report).

- In the past, certain elements of the legal community acting for plaintiffs were interested in being able to pursue cases repeatedly against audit firms and therefore did not aim for awards or settlements which would compromise the survival of the firm. However, nowadays, there is a risk that these elements might be solely interested in maximising recoveries without any particular considerations for the sustainability of the firm (see p. 81 of the report).

Costs of claims (Section 13.3, p. 82)

- The actual annual costs of the claims (i.e., the annual costs to the firms and insurance companies of the awards, settlements or reserves against

unresolved claims) against EU firms show only a small upward trend. But this cost has fluctuated widely over the last 20 years, reaching in 1991 a peak of almost € 470 million (U.S. $ 600 million) (in 2005 prices) (see p. 86 of the report).

- Over the period 1981 to 2003, the average annual cost was €147 million (U.S. $ 187 million) (in 2005 prices) (see p. 86 of the report).

- Moreover, as already noted, the number of high-value actual or potential claims facing a number of EU firms is high. As of 31st October 2005, there were 28 claims in excess of €79 million (U.S. $100 million), of which 11 were in excess of € 160 million (U.S. $200 million) and 5 were in excess of €785 million (U.S. $ 1 billion) (see p. 88 of the report).

Insurance programs (Section 14, p. 91)

- To manage the liability risks, firms and the larger networks have implemented internal risk management processes. Firms can also buy low level insurance, typically up to the legal domestic requirements, in the domestic insurance market place. It should be noted that when audit firms buy professional indemnity insurance, they do so for the whole of their activities and not separately for each line of business. (see p. 91 of the report).

- In response to declining availability of professional indemnity insurance and rapidly rising insurance premiums, the major networks set up captives which provide some insurance to the member firms of a network. These captives obtain a very limited amount of re-insurance from the single remaining lead re-insurer with an established program for auditors. In some cases all of a firm's insurance is provided by the captive and, in other cases, the insurance bought from the captive complements the insurance bought directly from commercial insurers. (see p. 92 of the report).

- Any award or settlement in excess of the cover provided by a captive has to be assumed by the firm directly (see p. 92 of the report)

Availability of commercial insurance (Section 15, p. 99)

- The availability of commercial insurance for high tranches of insurance has fallen sharply to the point that such insurance would cover less than 5% of some of the large claims some firms face nowadays. At the same

time, premiums have risen sharply. For example, they doubled over the last 5 years in the case of the reinsurance provided to the captives of the Big-4 while the cover became more limited and restricted (see p. 99 of the report).

- The main reason for this trend is the large losses sustained by the insurance industry in the underwriting of auditor professional insurance in the eighties and nineties. For example, over the period 1981 to 1992, the loss ratio, that is the ratio of the sum of the claims incurred over the period 1982 to 1992 to the sum of the premiums received over the same period, was 266% in the world excluding the U.S. and 305% in the U.S. (see p. 101 of the report).

- Moreover, the lack of risk diversification opportunities and the unpredictability of the occurrence of claims and of their eventual award/settlement quantum make it impossible to develop proper insurance programs for auditor liability (see p. 102 of the report).

- The reduction in commercial insurance coverage combined with the risk that a case is pursued by a plaintiff interested only in maximising recovery gives rise to the very real possibility that one of the major actual or potential claims will result in a major draw on the firms' resources (see p. 104 of the report).

The tipping point (Section 16, p. 104)

- As firms have practically no assets of their own which could be mobilised, the partners of the firm would in such a case bear the cost of the adjustment.

- Partners of firms of a network outside the jurisdiction of a network firm facing a catastrophic claim may also be called upon to bear part of the cost of the catastrophic claim faced by that firm if financial assistance to the threatened firm is deemed essential for the survival of the network (see p. 104 of the report).

- At issue is the size of the financial burden that partners would be willing to bear before the firm collapses (see p. 104 of the report).

- While there exist no precise estimates, discussions with representatives of the Big-4 networks suggest that a 15% to 20% income cut for 3 to 4 years would be bearable. The Big-4 have suggested that anything in

excess of this range would lead partners to leave in droves with a collapse of the firm very likely soon after (see p. 105 of the report).

- The problems experienced by the firm Laventhol in the U.S. in the late 1980s and early 1990s are very instructive in this regard. Following a number of large awards against the firm, the firm implemented in April 1990 a 50% reduction on partners' draws. Partners' started to leave in large numbers and the firm had to further reduce partners' draws by 80% in October. By November 1990 the firm had to file for bankruptcy (see p. 105 of the report).

- If one assumes in addition that, as a result of the mega-claim against the firm, some audit business will be lost to other firms and overall profitability falls by 10%, the tipping point at which a firm would fail ranges in the case of the four largest firms in the U.K.:

  - from €170 million to €365 million depending on the firm in the scenario with a 15% cut in income over three years; and,

  - from €255 million to €540 million in the case of a 4-year cut of 20% (see p. 105 of the report).

- This would be the maximum amount (single claim or multiple claims not exceeding that amount) a firm could afford to pay in award or settlement without gravely endangering its survival once the limited insurance coverage through the captive is exhausted. It would not be able to sustain a second claim of such a size in the immediate period following the settlement of the first claim as its resources and those of the captive would need to be rebuilt over a number of years (see p. 105 of the report).

- While one might question the assumptions underlying these calculations of the tipping point, the fact that U.K. firms face 6 claims or potential claims in excess of €250 million clearly illustrate the risks faced by these firms (see p. 116 of the report).

Public oversight bodies (Section 17, p. 108)

- The existence of public oversight bodies is judged by the majority of respondents to the audit firm, company and institutional investor surveys to yield an improvement in the quality but no change in audit liability risk, and no increase in commercial insurance availability (see p.

108 of the report).

Possible solutions (Section 18, p. 112)

- A number of alternative risk protection solutions are discussed in the report. These solutions deal with the lack of commercial insurance availability, the lack of risk diversification and the lack of risk predictability (see p. 113 of the report).

  - The first involves the creation of an international pool.

  - The second involves shifting the burden of the cost of the insurance to the investor in capital markets or the company buying the audit services.

  - The third shifts the burden of high awards/settlements to the government;

  - The fourth and last envisages some form of liability limitation.

- None of the approaches discussed above are free of problems and a full cost benefit analysis would need to be undertaken to determine whether, overall, such approaches yield a net social benefit (see p. 113 of the report).

Part III: Likely Short- and Long-Run Effects of the Possible Disappearance of One or More of the Big-4 Firms (Sections 20 to 23, pp. 119 to 133)

- The analysis of the survey results and the review of the actual migration patterns of the former clients of Arthur Andersen suggest that, under current circumstances, middle-tier firms are unlikely to become a major substitute for one of the Big-4 firms if one of these Big-4 firms were to disappear (see p. 134 of the report).

- Middle-tier firms would in all likelihood gain some new large company audit mandates from the client base of the failed Big-4 firm (see p. 120 of the report).

- But, the bulk of the large companies would still aim to stay within the now Big-3 firms (see p. 120 of the report).

- A similar point of view was expressed in discussions with a number of middle-tier firms. According to their representatives, not all middle-tier firms would have the scale and resources necessary to provide the required audit services to large public companies and some could be reluctant to undertake the necessary investments if, in all likelihood, they would gain only a few large client mandates (see p. 134 of the report).

- Moreover, middle-tier firms may view the risk of providing audit services to such large public companies as too high in light of their financial resources and the limited availability of liability insurance (see p. 134 of the report).

- A failure of one of the Big-4 networks may result in a significant reduction in large company statutory audit capacity if partners and other senior staff at the failed firm, the remaining Big-4 firms, and possibly even some middle-tier firms, were to decide that auditing is a too risky activity and therefore shift to other business lines. This would obviously create very serious problems for companies whose financial statements need to be audited (see p. 134 of the report).

- In such circumstances, a major increase in the price of statutory audits would be required to restore the equilibrium between demand for and supply of statutory audit services (see p. 134 of the report).

- The survey results show that, while Big-4 firms are concerned about the possibility that companies in high-risk industries may be unable to find an audit firm willing to undertake the audit in the case of the failure of a Big-4 firm, middle-tier firms and companies themselves do not share this view(see p. 122 of the report).

- Obviously, the adjustment to the market structure could be stressful and challenging and, during the transition phase to the new equilibrium, the completion of statutory audits may be delayed as clients may have to queue for the services of the remaining audit firms (see p. 134 of the report).

- Financial institutions in particular could face serious transition problem as the special skills their audits require and the independence rules may severely restrict their range of choice for a new auditor (see p. 134 of the

report).

- There could also be an impact on capital markets, especially during the transition phase. If the disappearance occurs close to the end of the financial year, investors may have to wait longer for the release of audited accounts. They may also be less familiar with the new auditor. Whether this would lead to significant perturbations in capital markets is an open question (see p. 134 of the report).

- Depending on which network were to disappear, financial institutions in particular could face very serious transition problems as the special skills, knowledge and cross-border reach their audits require may severely restrict their range of choice for a new auditor. This limitation of choice is likely to be exacerbated by the independence rule which may further restrict the range of potential replacement auditors (see p. 134 of the report).

- As noted in Section 4, the major financial institutions in the EU are almost exclusively audited by Big-4 firms and, in a number of countries, two Big-4 firms dominate the market for statutory audits of financial institutions. In contrast, across the EU, the Big-4 audit only about 2/3 of the non-financial companies listed on regulated stock markets (see p. 134 of the report).

- The capitalisation of financial institutions has grown considerably in recent years and so has their cross-border reach, especially that of the larger financial institutions. Middle-tier firms may find it difficult, if not impossible, to substitute for the failed Big-4 network due to the high liability risk and lack of required expertise (see p. 134 of the report).

- The cost of capital is unlikely to be impacted much directly even if audit fees increase sharply as the share of audit fees in total operating costs is typically very small. Even a doubling or a trebling of audit fees is unlikely to affect much profitability of companies, except those whose profitability was borderline (see p. 134 of the report).

- But, the cost of capital could be affected indirectly if the loss of one of the Big-4 was to make investors lose confidence more generally in capital markets (see p. 135 of the report).

- While such an impact could be potentially very substantial, it is difficult, if not impossible to quantify it precisely as the magnitude of the impact

will ultimately depend on the perceptions and mood of the investors at the time the failure occurs. If such a shock were to occur in already unsettled markets the impact could be much larger than in normal market conditions (see p. 135 of the report).

- So far, the discussion focused on the disappearance of a single Big-4 network. Given the limited availability of insurance and the large actual and potential claims faced by a number of Big-4 firms, it cannot be ruled out that a second network would fail too (see p. 135 of the report).

- Such a situation would obviously be dire and any market adjustment would be rendered much more difficult. In all likelihood, investor confidence would fall significantly and capital markets will most probably react much more negatively than in the case discussed above. The audit market adjustment to such a shock will also in all likelihood be much more difficult and chaotic, especially if such an event causes experienced audit staff and audit partners to leave the industry in light of the heightened risk (see p. 135 of the report).

- First of all, investors' confidence may be seriously shaken by such an event as they are likely to raise many questions about the value of audits and the audit profession, and capital markets will most probably react much more negatively than in the case discussed above. Investors' trust in audited accounts of companies likely will be severely undermined by such events and the costs of capital will likely rise as a result (see p. 135 of the report).

- There is also a considerably higher likelihood that a number of experienced audit staff and partners will leave the audit activity (see p. 135 of the report). As companies whose auditors have failed will need to find new auditors in a context of shrinking supply, the market for statutory audits will likely be very seriously perturbed and many audits may not be completed in a timely fashion. This is particularly likely to be the case for companies whose statutory audits require special skills and expertise (see p. 135 of the report).

- The price of statutory audits will also in most likelihood increase markedly, and this not only temporarily, as the surviving firms are likely to price a higher risk in their audit fees (see p. 135 of the report).

- The disappearance of one or two Big-4 networks may also seriously erode the reputation of the surviving Big-4 networks more generally. It is not clear, however, whether this would benefit middle-tier firms (see

p. 135 of the report).

- It all depends on whether the loss of reputation and confidence affects only the surviving Big-4 firms or whether there are spillovers to the middle-tier segment. In the former case, middle-tier firm could benefit as a barrier to entry would be reduced while in the latter case, the relative ranking, in terms of reputation, of the surviving Big-4 firms and the middle-tier firms may not change much with both groups suffering a loss in reputation. Perversely, a flight to safety and perceptions about quality could even make it more difficult for some middle-tier firms to enter the audit market typically served by Big-4 audit firms (see p. 135 of the report).

Part IV Economic Impact of Alternative Auditor Liability Regimes (Sections 25 to 35, pp. 119 to 177)

Liability regimes and incentives – a theoretical perspective (Section 26, p. 139)

- This fourth part begins with a theoretical assessment of the economic effects of auditor liability rules taking into account the interdependencies between auditors, company managers and investors (shareholders and creditors) (see p. 139 of the report).

- First, with respect to the incentives to increase audit efforts, the theoretical analysis shows that a negligence-based liability system has a number of advantages relative to a strict liability system. Under a negligence-based system, an auditor is liable only if there are errors in the financial system and he/she has failed to deliver a certain level of due care while under strict liability, an auditor is always liable if there are errors in the financial statements. Under a negligence-based system, an auditor has greater incentive to increase the audit effort than under a strict negligence system as it increases the probability that errors are detected, which leads to a reduction of the expected damage payments and it decreases the probability that the audit effort is viewed as negligent in a trial. Under a strict liability system, only the first effect is present. The overall benefit of either regime depends on how the legal costs are determined and the possibility of settlements. The superiority of either regime depends on the institutional arrangements (see p. 142 of the report).

- Second, the theoretical analysis shows that choice between joint and several liability and proportional liability needs to take account of the

various interactions between auditors, investors and company managers. For example, under proportional liability, an auditor may have a reduced incentive to deliver high audit efforts but the overall impact on the quality of the financial statements is not necessarily negative as managers may have a reduced incentive to engage in earnings management. Conversely, under joint and several liability the auditor will deliver a higher audit effort. However, because of joint and several liability, investors have higher expectations of recovery in case of problems and, everything else being equal, this pushes up the price of the securities issued by the company due to the larger damage payments investors can expect in case of problems with the audit. This in turn raises the incentive for managers to engage in earnings management such that the final outcome may be a reduction in the quality of the financial statements (see p. 143 of the report).

- Third, the theoretical analysis shows that unlimited liability may result in a situation where the economic costs of unlimited liability exceed the benefits. It is important to note that, in equilibrium, investors bear ex-ante the costs of any damages expected to be paid by auditors because the latter will include such costs into the fees charged to companies. Hence, in some sense the expected liability payments and the respective part of the audit fee cancel out in a market context. In fact, the extent of auditor liability has to take account of the incentives for audit efforts, the related audit and expected legal costs, and the resulting gross benefits from improved information in the capital market (see p. 141 of the report).

Other factors driving audit quality (Section 27, p. 147)

- Obviously, the financial incentives of a given liability regime are not the only factors which drive audit efforts. Reputation and the actions of the supervisory and enforcement bodies are equally important (see p. 148 of the report).

- Independent public oversight bodies and regulatory enforcement bodies are additional important features of the regulatory environment for statutory audits which, jointly with reputational effects, complement the direct incentive effects of the different liability regimes and which may in some instance reinforce the case that the costs of unlimited liability exceed the benefits (see p. 148 of the report).

- In contrast, the difference in effects of rules-based standards and principles-based standards on audit quality are less clear-cut. It is an open question whether the reported earnings will be more or less

conservative by more relying on principles instead on specific rules, and the answer eventually depends on the efficacy of the entire system of governance and the way courts act under a specific liability regime. Especially the latter point is hard to assess in advance and is an empirical question that can only be answered after a change of the standards-design (see p. 150 of the report).

Impact of different auditor liability regimes on audit quality – an empirical assessment (Section 29, p. 154)

- The vast majority of survey respondents from both the Big-4 and the middle-tier firms were of the opinion that a limitation on auditor liabilities would have no effect on how accounts audited under such a regime would be viewed by capital markets. In other words, a limitation of auditor liability is not expected to affect the "value" of the audit . (see p. 154 of the report).

- Similarly, a majority of companies are of the view that the liability regime has no impact on the quality of the audit (see p. 155 of the report).

- However, the majority of institutional investors having responded to the survey, as well as representatives of organisations representing institutional investors, are concerned that a limitation of auditors' liability will affect audit quality negatively (see p. 155 of the report).

- Finally, our own detailed empirical analysis of one dimension of audit quality, namely earnings management as proxied by accruals management, does not appear to be affected by the existence of a limitation on auditor liability (see p. 156 of the report).

- Obviously, audit quality cannot be reduced to a single dimension and encompasses many more factors. However, there exists no or only limited information on other aspects of audit quality (such as the quality of advice regarding internal audit and control processes, restatements of accounts, richness of letters or reports to the audit committee, etc) and we relied therefore on the approach typically taken by the academic literature on determinants of audit quality (see p. 157 of the report).

Impact of different auditor liability regimes on claims against auditors (Section 30, p. 159)

- In the EU25, there exist neither comprehensive, publicly available, data

on court awards against audit firms regarding matters related to statutory audits nor on settlements by firms of such claims against them (see p. 159 of the report).

- However, for the purpose of the present study, AON has assembled information on all outstanding matters (formal legal claims and issues that have not yet given rise to formal claims but are likely to do so) involving the Big-4 firms plus Grant Thornton and BDO as of 31st October 2005 (see p. 159 of the report).

- About a third of these matters are in the range of U.S. $10m to U.S. $30m, 11 are in the range of U.S. $200 million to U.S. $ 1 billion, and 5 are in excess of U.S. $ 1 billion. Italy is the country with the highest number of outstanding matters (21), followed by the U.K. (13), the Benelux (7) and Spain/Portugal (7). In total there are 69 such matters (see p.159 of the report).

- However, the information on outstanding matters does not provide any conclusive evidence, one way or another, about the effect of a liability limitation on the size of claims and awards firms face in Europe (see p. 159 of the report).

- Reflecting the riskiness of their activities, a large majority of audit firms (83% in the case of Big-4 firms and 70% in the case of middle-tier firms) indicated that the level of fees varies with the riskiness of the assignment (see p. 162 of the report).

- However, an even slightly larger majority (87% and 77% respectively) was of the view that the risk was not fully priced into the fees because of the intensity of competition among audit firms. Obviously, over the longer run, this is not a sustainable situation and audit fees would have to rise to reflect the growing liability risk of statutory audits (see p.162 of the report).

- The responses from firms in countries with a liability cap were either almost identical or very similar to those from countries with no liability cap (see p. 162 of the report).

Impact of different auditor liability regimes on audit market structure (Section 32, p. 164)

- With regards to the impact of the auditor liability regime on the structure

of the market for statutory audits, we do not find any significant differences in concentration, as measured by the HHI, in the narrow market of the top 20 companies between the group of countries with an auditor liability limitation and the group of countries with no limitation (see p. 164 of the report).

- However, when the HHI is computed for the top 50 companies, the countries with an auditor liability limitation show, on average, a significantly lower concentration figure than the countries without a limitation (see p. 164 of the report).

- This suggests that the existence of an auditor liability limitation may help middle-tier firms breaking into the market segment that is largely dominated by the Big-4 firms in many countries. The very small size of the sample with an auditor liability cap, however, does not allow one to draw strong inferences from the data. Moreover, many other factors may influence the presence of middle-tier firms in that particular segment (see p. 164 of the report).

- Differences in liability regime do not appear to affect significantly the firms' attitude towards risk within the market segment they serve. . Indeed, the survey results show that firms from countries without a limitation on auditor liability are only marginally more inclined to decline or resign from an audit mandate because of potential liability risk than firms from countries with a limitation (see p. 167 of the report).

- Moreover, in terms of the geographical distribution of such audit mandate declines and resignations, the differences in auditor liability regime do not appear to be a major factor (see p. 168 of the report).

Impact of different auditor liability regimes on the cost of capital of companies (Section 33, p. 171)

- Overall, the majority of all respondents from the four survey groups (Big-4 firms, middle-tier firms, companies and institutional investors) does not believe that the cost of capital is impacted by a limitation of auditors' liability (see p. 172 of the report).

- Moreover, in our extensive empirical analysis of the determinants of the cost of capital we also failed to find any statistically robust evidence of a differential impact on the cost between unlimited liability and capped liability regimes (see p. 174 of the report).

- However, within the sub-group of respondents believing that financial statements audited under a limited liability regime are providing a less true and fair view, a majority of middle-tier firms, companies and institutional investors are of the opinion that a limited liability regime results in a higher cost of capital for companies (see p. 171 of the report).

Impact of different auditor liability regimes and staffing (Section 34, p. 176)

- Finally, an unlimited liability regime or a very high liability regime is viewed by the vast majority of audit firm respondents as making it more difficult to attract new talent into the profession and more importantly, to retain experienced staff with a view to make them partners. Overall, the unlimited liability regime is perceived by audit firms as having a potentially significant impact on the capacity of firms to supply the audit market (see p. 176 of the report).

Key conclusions of Part IV (Section 35, p. 177)

- Overall the key points to note from this third part of the study are (see p. 177 of the report):

  - From a theoretical point of view, when one takes account of the impact of auditor liability on the incentives faced by auditors, the management of the company being audited and capital market participants as well as the costs of the audit efforts and the legal costs of liability, an unlimited liability regime may result in a situation where the costs of unlimited liability exceed the benefits.;

  - With the exception of institutional investors, differences in liability regimes are not perceived as having a significant impact on audit quality. Moreover, a majority of Big-4 firms, middle-tier firms, companies and institutional investors is of the view that an auditor liability limitation will have no impact on the cost of capital of companies. The results of our empirical analysis support this point of view;

  - A limited liability regime may contribute to reducing concentration in the market segment of statutory audits for large (but not very large) companies;

  - Finally, a limited liability regime may also help firms address

some of their staffing pressure points (in particular retaining experienced staff, especially partners).

Part V How to limit the auditors' statutory audit liability (Sections 36 to 39, pp. 183 to 207)

- A number of countries (Austria, Belgium, Germany, Greece and Slovenia) have through legislation introduced a limitation on auditors' liability while the draft law currently reviewed by the U.K. Parliament foresees the possible for the liability to be limited by contract between the audit firm and the company whose financial accounts are being audited. A number of other Member States permit the auditor to limit his liability by contract. However, in those countries the auditor has a wider duty of care to other third parties (e.g., banks or individual shareholders) than is the case in the United Kingdom such that contractual liability limitations only partly address the auditor's total exposure (see p. 183 of the report).

- Overall, there exist three broad types of statutory audit liability limitation (see page 186 of the report). These include:

  - An absolute limit (or absolute cap). This is the approach taken in Belgium, Germany and Slovenia. In both Belgium and Germany, the level of the cap is different for listed and unlisted companies;

  - A variable limit which varies with either the size of the company being audited or the size of the audit firm (variable cap). This is the approach taken in Austria where the level of the cap varies with the size of the company and in Greece where the level of the cap varies with the audit fee income of the audit firm;

  - A limitation of the liability to the contribution of the audit firm to the damage suffered by the plaintiff (proportionate liability).

- Some of these models can be combined. For example, it is possible to combine an absolute cap with a proportionate liability regime (see p. 198 of the report)

- The diversity in size of audit firms and companies across the EU is such that it is unlikely that a one-size-fit-all approach is the most useful (see p. 188 of the report).

- In the case of a joint and several liability regime, a statutory audit liability limitation will help address the "deep pocket" syndrome whereby the audit firm is typically viewed by plaintiffs as having the largest resources and is therefore the target of complaints irrespective of the contribution and responsibility of the firm to the event. Any limitation of the statutory audit liability will shift some of the liability risk to directors and officers of companies (see p. 201 of the report).

- In order to assess the different potential models for limiting auditors' liability, the use of the following four assessment criteria is recommended (see p. 199 of the report):

  - Criterion 1: Impact on risk that one or several Big-4 firms disappear in the case of a catastrophic claim;

  - Criterion 2: Impact on insurability of statutory audit liability risk;

  - Criterion 3: Impact on competition and entry by middle-tier firms into the market for statutory audits of large companies;

  - Criterion 4: Impact on audit quality.

- That being said, the key policy challenge in terms of reduced risk for audit firms and increased competition by the audit firms is not so much the precise form of the limitation as the level of liability that firms face in a regime in which auditors' liability is limited (see pp. 202 to 206 of the report).

  - A relatively high limit may be appropriate for the Big-4 firms as it provides incentives to audit firms to focus on audit quality but may not result in significant entry of middle-tier firms into the audit market served by Big-4 firms.

  - Conversely, a liability limit which is low enough to encourage middle-tier firms to audit larger companies may not provide the appropriate incentives to the Big-4 firms.

1 Introduction

1.1 Context

The recently adopted Directive [2] of the European Parliament and the European Council on the statutory audit of annual accounts and consolidated accounts and amending Council Directives 78/660/EC and 83/349/EEC and repealing Council Directive 84/253/EEC provides in article 31 that:

> *The Commission shall before the end of 2006 present a report on the impact of the current liability rules for carrying out statutory audits on the European capital markets and on the insurance conditions for statutory auditors and audit firms, including an objective analysis of the limitations of financial liability. The Commission shall, where appropriate, carry out public consultations. In light of that report, the Commission shall, if it considers it appropriate, submit recommendations to the Member States.* [3]

To assist it in its preparation of the report stipulated by article 30a in the Directive proposal, the EC DG Internal Market and Services has:

a) set up the Auditor Liability Forum,[4] a group of experts; and,

b) commissioned the present study whose broad objectives, according to the terms of reference are:

- *"to undertake a detailed examination of the economic impact of the various auditors liability regimes which exist in Member States, from the perspective of the auditors, the capital market, the insurance market and the directors (impact on their liability) and*
- *to identify the various solutions to ensure a high quality audit on the one hand and to maintain the audit function as an economically viable activity on the other hand."*[5]

[2] See Official Journal of the European Union, L157/87, 9th September 2006.

[3] See Council of the European Union (2005) op. cit.

[4] Detailed information on the Auditor Liability Forum can be found on the European Commission's website at http://europa.eu.int/comm/internal_market/auditing/liability/index_en.htm.

[5] See European Commission (2005), *Study on the Economic Impact of Auditors' Liability Regimes, Invitation to tender*, MARKT/2005/24/ October.

1.2 Detailed objectives of the present study

In addition to providing some broad objectives to be achieved, the European Commission also specified a number of more specific points and issues that were to be addressed in the study.

These include:

1. An analysis of the economic impact of potential auditor liability regimes, including a review of the market as it stands at the present time;
2. An analysis of the auditor liability insurance
3. An assessment of the likely effects if one or more of the Big-4 networks were to disappear;
4. An evaluation of the impact of imposing alternative liability regimes; and,
5. A consideration of how to limit auditors' liability.

The terms of reference also framed the scope of the study by specifying that:

- With regards to the population of businesses requiring the services of auditors, the main focus of the study is on listed companies (see definition below);
- With regards to the services provided by audit firms, the focus is exclusively on statutory audit services.

It should be noted that the study takes as given the current legal and regulatory framework governing auditing activities by audit firms. This framework is undergoing changes in a number of Member States and these are no yet reflected in the data reported in the present study.

The structure of the present report reflects the sub-division of the research objectives into five major blocks of interest and each topic is addressed in a separate and self-contained part of the report.

In many cases, annexes provide much more detailed information on the specific issue(s) addressed in a section or sub-section and the interested reader is invited to consult the relevant annex.

1.3 Glossary

Before, proceeding any further, a number of concepts used throughout the report are defined below:

Audit liability risk: The risk of a future liability claim against an audit firm related to its audit activities.

Audit services: In this report, audit services always refer to statutory audit services. A statutory audit involves carrying out an audit of the annual accounts of a company (or a body of undertakings) and verifying that the annual report (annual consolidated report in the case of a body of undertakings) is consistent with those annual (consolidated) accounts when such an audit and such verification is required by law.

Non-audit services: All services other than audit services provided by audit firms to companies. Non-audit services include, among others, the provision of financial information technology, internal audit services, tax services, valuation services, litigation services, recruitment services, general business management services. Non-audit services may be provided to non-audit clients without limitation. Limitations on audit services will apply only when delivering non-audit services to audit clients.

Audit and non-audit fees: Remuneration for audit and non-audit services supplied by audit firms to companies.

Big-4 audit networks: This group of audit firm networks includes Deloitte Touche Tohmatsu, Ernst & Young, KPMG and PricewaterhouseCoopers.

Big-5 audit networks: This group of audit firm networks includes the Big-4 plus the former Arthur Andersen.

Big-6 audit networks: This group of audit firm networks includes Arthur Andersen, Coopers & Lybrand, Ernst & Young, Deloitte & Touche, KPMG Peat Marwick, and Price Waterhouse.

Big-8 audit networks: This group of audit firm networks includes Arthur Andersen, Arthur Young, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, KPMG Peat Marwick, Price Waterhouse, and Touche Ross.

Company: Any entity organised as a limited liability entity undertaking an economic activity other than the provision of audit services.

Independence regulations: Set of regulations aimed at ensuring that, when carrying out a statutory audit, the statutory auditor or audit firm is independent from the audited company.

Insurance premium: The annual cost of the insurance paid by the insured party to the insurer.

Liability insurance: The insurance against liability risks.

Listed company: A company whose transferable securities (shares, bonds or any other securities giving the right to acquire or sell any such transferable securities or giving rise to a cash settlement determined by reference to transferable securities, currencies, interest rates or yields, commodities or other indices or measures) are admitted to trading on a so-called "regulated market" in the EU, within the meaning of the MiFID , and which are now required to apply IFRS for consolidated account in 2005 or in 2007.

Middle-tier audit firms: This group includes all the audit firms other than Big-4 firms that belong to smaller networks and generally undertake statutory audits of medium-size companies as well as occasionally of larger companies.

Network: Larger structure aimed at cooperation and to which a statutory auditor or an audit firm belongs and which is clearly aimed at profit- or cost-sharing or shares common ownership, control or management, common quality control policies and procedures, a common business strategy, the use of a common brand-name or a significant part of professional resources.[6]

1.4 Information sources

The information provided in this report comes from a range of data sources:

- Extensive reviews of the existing literature. The literature referred to in the present report is mainly comprised of academic articles published in refereed economic and accounting journals, and studies by regulators and other official bodies;
- Primary data gathered through surveys of audit firms, companies, and institutional investors. Below, in Section 1.5, we provide some information about the surveys and more detailed information is provided in Annexes 2 to 5;
- Face-to-face meetings or telephone calls with representatives of a number of audit firm networks, the insurance sector (brokers, insurance and re-insurance companies) and other interested parties such as representatives of institutional investors. A detailed list of the people we have met in the context of the present study is provided at Annex 1.
- Our own statistical and empirical analysis, using data from various data sources, in particular AMADEUS[7] , Bloomberg Professional[8] and the annual reports of a wide range of companies.

While the surveys form the backbone of the information-gathering exercise, we complemented this primary data-gathering process with face-to-face

[6] See Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directives 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EC. (Official Journal of the European Union l157/87 of 9.6.2006).

[7] AMADEUS from Bureau van Dijk Electronic Publishing (BvDEP) is a comprehensive, pan-European database containing financial information on approximately 8 million public and private companies outside the financial sector in 38 European countries. In particular, for a number of countries, it also provides the name(s) of the auditor of the company.

[8] Bloomberg Professional is a financial information service providing, among others, a wide range of information on companies whose securities (equity, bonds, warrants, options, etc) are traded on stock markets and other trading platforms.

meetings, or extensive telephone interviews in cases where this proved more convenient for the participants, to gather additional contextual or confidential information.

A survey of insurance companies had also been originally planned. But, early into the project it became clear that, given the nature and complexity of the insurance related questions, it would be much more fruitful to gather the necessary information through a number of interviews. It also proved impractical to survey the views of individual investment banks and other corporate advisors.

1.5 Survey details

As noted above, large scale surveys of audit firms, companies and institutional investors were undertaken to gather information on a range of issues.

The questionnaire for each of the three groups of key stakeholders is provided respectively at Annex 2, Annex 3 and Annex 4, and more detailed information on the composition of the survey samples and the response rate to the various surveys can be found at Annex 5.

1.5.1 The survey of audit firms

The survey was sent to audit firms of 24 networks, namely the Big-4 networks and the two largest middle-tier firm networks (i.e. BDO and Grant Thornton) belonging to the European Contact Group (ECG) and the other middle-tier networks belonging to the European Group of International Accounting Networks (EGIAN). ECG and EGIAN are the respective European umbrella organisation for the large and middle-tier firms.

Thus, the survey sample of audit firms includes firms belonging to the following networks: Ernst & Young, Deloitte, Touche & Tohmatsu, KPMG, PwC, BDO, Grant Thornton, AGN International, Baker Tilly International, BKR International, DFK International, Groupe Constantin, HLB International, Horwarth International, IGAF Worldwide, Kreston International, Mazars, Moore Stephens International, Moores Rowland International, MSI Legal & Accounting Network Worldwide, Nexia Europe, Polaris International, RSM International, Russell Bedford International and UHY International.

In each case, a central contact point at the network ensured that the questionnaire was sent to at least one of their member firms in each EU Member in which the network is represented, typically the largest or one of the largest firms in the country.

In some cases responses were centralised by the network while in other cases they were sent directly to London Economics (LE).

Responses from firms in practically all the Member States have been received from the Big-4 networks, BDO and GT (see Figure 1).

In addition a number of responses were received from a number of other middle-tier firms.

In total 154 audit firms sent back a completed questionnaire, of which 90 belong to one of the Big-4 networks (see Table 89 in Annex 5 for the detailed response rate by Member State).

In addition to the survey of audit firms belonging to networks, a separate survey of larger, independent audit firms in a number of Member States was also undertaken. This additional audit firm sample includes 25 audit firms in France, 21 in Germany, 12 in Italy, 3 in the Netherlands, 10 in Sweden and 40 in the UK. The precise selection varied from country to country. But, typically, the selected firms are large enough in terms of resources and skills to undertake audits of at least medium-size companies.[9] Six responses have been received from independent audit firms. In the subsequent analysis of the responses from audit firms, the responses from independent firms were combined with those of firms belonging to middle-tier networks.

As the focus of the study is the market of statutory audits for large international companies and not the statutory audit market as a whole, the limited response, in terms of numbers and geographical breadth, of independent firms is not a concern as such firms do not typically undertake audits of large companies.

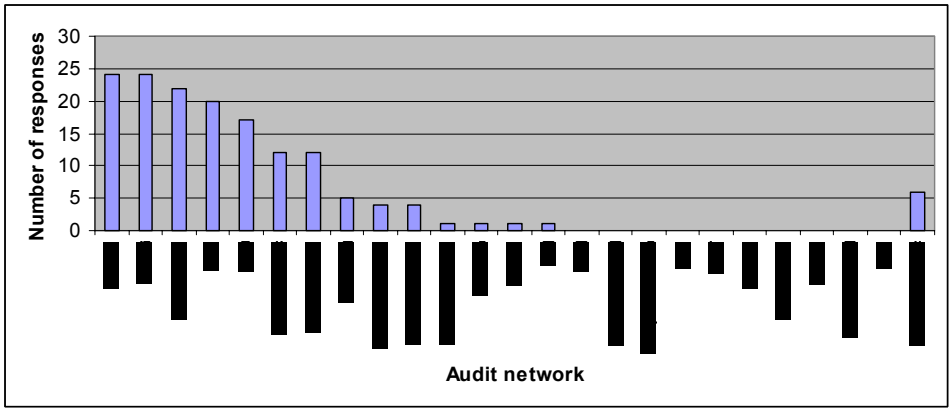
The details of the number of answers to each question are provided at Annex 5.

To ensure that the responses of the middle-tier firms are not swamped by those of the Big-4 firms in the subsequent analysis of the survey responses, the responses from the Big-4 firms and the middle-tier firms are always reported separately.

In the case of the major networks (Big-4 networks plus BDO and GT), we also examined whether firms belonging to the same network provided identical answers to specific questions, thus de facto reducing the number of "independent" answers. In general, we did not find this to be the case (see details at Annex 5).

[9] In the case of Italy, all the additional firms are those accredited by the Consob for undertaking audits of listed companies.

Figure 1: Number of responses to survey of audit firms by network



Source: London Economics survey of audit firms

1.5.2 The survey of companies

The sample of companies to be surveyed was constructed as follows.

First, for each Member State, we selected all the companies included in the main index of the main stock market in the country.

Next, we selected a random sample of about 10% of the other companies listed on the main stock market.[10]

In some cases, this procedure yielded too small a number of companies. Therefore, where possible, additional companies were added randomly with a view to obtain a sample of at least 30 companies per Member State.[11]

Overall the size of the survey sample ranges from 467 in the UK[12] to 15 in Malta and Estonia and in total 1,889 questionnaires were sent to the selected companies. The details of the size of the survey sample by Member State are provided in Table 90 at Annex 5.

[10] To ensure complete randomness of the selection process, we first drew from a hat the first letter (H in our case) of the name of the first company to be included in the selection and then used the respective stock exchange's list of listed companies to select every tenth company on the list beginning with the first company identified by the letter draw.

[11] In a few cases, the country sample includes fewer than 30 companies because less than 30 companies are quoted on the main segment of the stock exchange.

[12] In the cases of the LSE and Euronext, a number of firms were also selected from their respective junior markets, namely AIM and Alternext, although the latter are not regulated markets within the meaning of MiFID.

In addition, the same questionnaire was sent to 484 private companies in the EU25 with an annual turnover of at least €500million in 2004, the last year for which complete data are available in the Amadeus databank.

In addition, to also provide a U.S. perspective, a shorter version of the questionnaire was sent to 200 companies listed on the NYSE and Nasdaq.

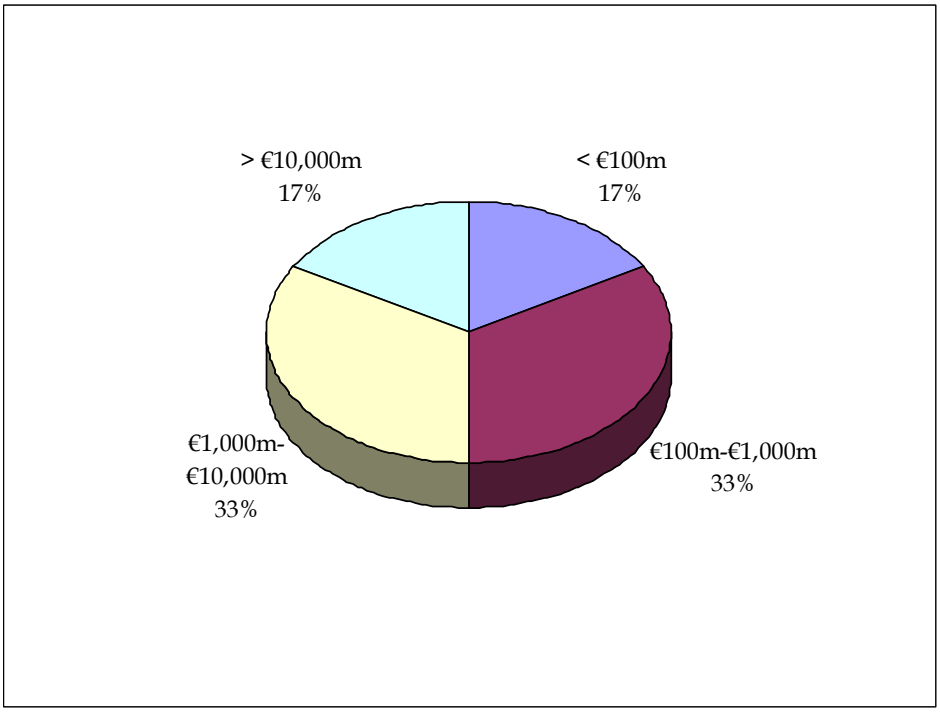
As the initial response rate was relatively poor, the initial mailing was followed up in May by telephone calls to about 600 companies. This follow up helped improve the response rate, and 146 European companies have sent back a completed questionnaire, yielding a response rate of 6.1%. In addition we received 33 responses from U.S. companies.

With the exception of the Czech Republic, Estonia, Cyprus, Latvia, Slovenia and Slovakia, at least one response was received from companies in each Member State (see detail at Annex 5).

Obviously, as participation in the survey was not compulsory, the company responses may be affected by self-selection bias in that companies, which have a particular interest in the issue of auditor liability, may have been more likely to respond to the survey. Unfortunately, the risk of such a bias is inherent to any studies relying on voluntary participation and applies not only to the responses to the company survey but also to the responses to the audit firm survey and the institutional investor survey.

As shown in Figure 2 (overleaf), the responses received reflect a good distribution in terms of company size, with very large companies with an annual turnover in 2005 of more than €10 billion accounting for 17% of the responses and large companies with an annual turnover of between €1 billion and €10 billion accounting for 33% of the responses.

Figure 2: Distribution of EU companies having responded to survey by size of turnover in 2005 (millions of €)



Source: London Economics survey of companies

The same is true in terms of the sectoral distribution of the responding companies. The three largest groups represented in the sample are manufacturing companies (35%), business services companies (28%) and financial sector companies (22%) (see Table 1 overleaf).

Table 1: Sectoral distribution of EU companies having responded to survey	
Sector (Nace[1] classification)	**Share in total responses (%)**
Mining (Nace 10)	4
Manufacturing (Nace section D)	35
Construction (Nace section F)	4
Transport (Nace 60-63)	4
Telecommunications (Nace 64)	2
Financial Intermediation (Nace section J)	22
Business Services (Nace 71 to 74)	28
Total	100[1]

Note: the sum of the shares does not add up to 100 because of rounding. NACE is the *General Industrial Classification of Economic Activities within the European Communities.*
Source: London Economics survey of companies

Table 2: Characteristics of U.S. companies having replied to the questionnaire			
Sector of company	**Share of respondents**	**Size of company**	**Share of respondents**
Manufacturing (Nace Section D)	24%	<U.S. $100m	12%
Services excluding services (Nace Sections E to I, and K)	33%	U.S. $100m to U.S. $250m	36%
Financial Intermediation (Nace Section J)	42%	U.S. $ 250m to U.S. $500m	9%
		U.S. $ 500m to U.S. $1bn	15%
		>1 bn	27%

Source: London Economic survey of companies

1.5.3 The survey of institutional investors

In total, 250 questionnaires were sent to institutional investors in a number of EU Member States and the United States. The precise number of questionnaires sent to such institutional investors in each Member State is provided at Table 91 at Annex 5.

In total 31 responses have been received yielding a response rate of 12.4%. This set of responses originates from 13 Member States (see details at Annex 5).

A summary breakdown by the size of the assets under management shows that the majority of the responses is accounted for by institutional investors with less than €25 billion in assets under management.

Table 3: Distribution of responses of institutional investors by size of assets under management

Size of assets under management	Share of responses
Less than €25 billion	71%
€25 billion to €50 billion	6%
€50 billion	23%

Source: London Economics survey of institutional investors

To complement the information yielded by the responses to the survey of institutional investors, a number of representative organisations were also consulted. Their names are provided at Annex 1.

1.6 Structure of the report

As already mentioned, the report is divided into a number of parts, each addressing one of the five issues listed in the terms of reference of the project.

Part I reviews the state of the international market for audit firms in the EU. This part:

- Presents key facts about the patterns of concentration in the audit market (Section 3);

- Examines briefly whether any specialisation patterns are apparent in the statutory audit market segment served mainly by the Big-4 firms (Section 4);
- Discusses the factors which have led to the current patterns of concentration (Section 5);
- Reviews the barriers to entry by middle-tier firms into the top tier (section 6);
- Discusses the range of actors which determine a company's choice of provider of auditor services and related services (Section 7);
- Addresses the influence of various stakeholders on a company's choice of auditor (Section 8);
- Reviews the factors which influence a company's decision to change its auditors (Section 9);
- Discusses the prospects for mergers and acquisitions among smaller and medium-sized firms (Section 10);
- Sets out a number of conclusions related to the issues addressed by this part of the report (Section 11).

Part II focuses on the insurance market for statutory audit.

- First, after a brief introduction (Section 12), it discusses the statutory audit risks faced by audit firms (Section 13);
- It then addresses issues related to audit risk and liability insurance (Section 14);
- Next, it reviews the availability of insurance for audit firm liability (Section 15);
- The following section assesses the threshold at which a mega-claim could wipe out a major audit network (Section 16);
- Then, it examines the impact of potential external quality oversight bodies on audit quality and liability risks (Section 17);
- Finally, it focuses on alternative protection solutions (Section 18);

Part III discusses the likely short- and long-run effects of the possible disappearance of one or more of the Big-four firms (Sections 20 to 23).

Part IV assesses the impact of alternative auditor liability regimes.

- First, following a brief introduction to this part of the report (Section 25), it reviews from a theoretical point of view the impact of different regimes on incentives (Section 26);

- It then briefly reviews the current legal landscape with regard to auditor liability in the EU (Section 28);
- Next, it discusses the impact of different regimes on audit quality (Section 29);
- Then, it reviews the impact of different regimes on claims faced by audit firms (Section 30);
- It then addresses the impact of different regimes on audit fees (Section 31);
- Thereafter, it discusses the impact of different regimes on audit market structure in Europe (Section 32);
- Next, it examines the impact of different regimes on capital markets (Section 33);
- Finally, it reviews the impact of different regimes on audit firm staffing (Section 34);
- A summary and key conclusions are provided in the last section of this part of the study (Section 35).

Part V reviews a number of potential approaches for limiting the statutory audit liability of auditors (Section 36 to Section 38)

Finally, **Part VI** sets out the overall conclusions of the study.

As already noted, a number of annexes in **Part VII** provide much more detailed information for a number of the sections in the main part of the report. The relevant annexes are flagged in each section of the core report.

1.7 Acknowledgments

We would like to thank the Auditor Liability Forum members and the various representatives of the audit firm networks, the audit profession and the insurance industry for the valuable advice and information they have provided during the project.

Part I: The State Of The International Market For Audit Firms In The EU

2 Introduction

In this first part of the report we:

- First, provide information on the level of concentration in the audit market in the 25 Member States and review trends in audit market concentration;
- Then, we review whether the audit market segment served mainly by the Big-4 firms shows signs of specialisation among the Big-4 networks;
- Next, we discuss the reasons which have led to the current patterns of concentration;
- Thereafter, we review potential barriers to entry by middle-tier firms into the statutory audit market segment served typically by the Big-4 firms;
- As any statutory audit market segmentation depends to a large degree on the behaviour of audit clients, we then examine in greater detail:
    - the factors which determine a company's choice of auditor;
    - the influence of various stakeholders on a company's choice of auditor
    - the factors which influence a company's decision to change auditor;
- Finally, we discuss the prospects of mergers and acquisitions among middle-tier firms;
- The last section provides some conclusions regarding this particular part of the report.

3 Patterns of concentration of the audit market

3.1 Context

A number of studies have shown that the statutory audit market is highly concentrated in a number of industrial countries such as, for example, the US (GAO, 2003), Germany (Grothe, 2005) and the UK (Oxera, 2006).[13]

So far, however, there exists no comprehensive picture of the level of audit market concentration in the European Union. To fill this gap, this section provides information on the degree of concentration in EU Member States while in Section 4 we discuss some of the factors (such as globalisation and changing needs of clients, technological innovations, disappearance of one of the major networks, etc) which have led to this concentration.

Estimating the degree of concentration in the audit market raises a number of questions that need to be addressed before the actual computations of the concentration indicators can be undertaken.

1. How is the audit market to be defined? Does it include all the companies subject to statutory audits? Should it be segmented by size or sector of the companies being audited?
2. What variable should be used to measure the activity of the audit firms? Ideally, like in the case of any other industry, one would wish to use a market share measure based on sales or turnover, or, in the present case, audit fees. But what other variable should one use when such fees are not publicly available? Are the number of audit mandates and the size of the companies being audited suitable replacement variables in the absence of information on audit fees?

In the next sub-section, we explain how we address these issues in the context of the information that is available in the EU Member States.

3.2 Methodological discussion

The audit market definition

In previous analyses of the relevant market of audit services, EC DG Competition has repeatedly concluded that there exists a separate market for the "*provision of audit and accounting services to quoted and large companies, whether national or multinational, and which are provided predominantly, if not*

[13] For a comprehensive overview of the various studies on audit markets see Grothe (2005).

exclusively by the Big Six firms as, in the main, only they can satisfy the requirements of such companies, namely to have their audit and accounting services provided by a firm with the necessary reputation in the financial markets (in the case of quoted companies), the geographical breadth to cover their companies' needs world-wide (in the case of multinationals), the depth of expertise in their particular sector (large companies in general and, in particular, regulated sectors such as banking and insurance) and significant resources (all large companies)".[14]

As the analysis focuses on auditor liability regimes and capital markets, we examine the concentration of statutory audit services at three levels:

- First, we focus only on the listed companies included in the main stock market index of each EU25 Member State's main stock exchange;[15]
- Next, we consider all the companies listed on the main stock exchange of each EU25 Member State;
- In addition, we also provide information on the concentration ratio of audit services for all public companies, listed and non-listed.

A comparison of concentration among the three groups of companies provides an indication of the extent to which the statutory audit market is less dominated by the Big-4 firms in the segments of the non-listed and/or smaller companies.

The purpose of this report is not to undertake a detailed competition analysis of each audit market in each Member State. Rather, it is to provide a good overview of the degree of audit market concentration in the various EU Member States. Therefore, in our view, the three-level analysis will provide a sufficiently good snapshot of the current situation.

The market measurement variable

As noted earlier, ideally one would want to use audit fees charged by audit firms to measure the market share of each audit firm.

However, a survey by the European Federation of Accountants (FEE) of its members undertaken in the context of the preparations of the present study showed that data on audit fees paid by individual companies are available in only a limited number of EU Member States.[16] Moreover, such data are

[14] See EC DG Competition Case No. IV/M.1606 – Price Waterhouse/Coopers & Lybrand, Decision of 20 May 1998, Case No. Comp/M.2810 – Deloitte & Touche / Andersen (UK), Decision of 1 July 2002, Case No. Comp/M.2824– Deloitte & Touche / Andersen (Germany), Decision of 27 August 2002 and Case No. Comp/M.2816 – Deloitte & Touche / Andersen (France), Decision of 5 September 2002.

[15] The name of the main index of each Member State's stock exchange and the number of companies included in the index are provided at Annex 5.

[16] See note prepared by FEE *Summary of responses to the survey on audit fees as part of the auditor's liability study* for the meeting of the Auditor Forum of 10th March 2006.

generally not collected in a central databank but have to be extracted from the annual reports of the individual companies.

While we provide later on information on audit fees, in the absence of generally available data on audit fees, we use two variables to measure the market share of the various firms. The first variable is simply the number of audit mandates of a firm and the second variable is the aggregate turnover of the companies audited by a firm.

The second variable gives greater weight to the audit mandates of large companies than the first variable and reflects better the audit market reality faced by such companies.

How to measure concentration

In the tables overleaf, we report a range of concentration measures.

- First, we provide the market share of:
    - the largest audit firm (C1);
    - the two largest audit firms (C2);
    - the four largest audit firms (C4); and,
    - where relevant, the eight largest audit firms (C8).
- Second, we also provide the estimated Herfindahl-Hirschman index (HHI)[17] which is equal to the sum of the square of the market shares of all audit service providers. As this concentration measure takes account of the market shares of all the suppliers in a given market, it is a more comprehensive indicator of concentration than the concentration ratios described above and is widely used by competition authorities to assess the structure of a given market.

[17] In the U.S. a HHI value of more than 1,800 is viewed as problematic while in the EU, in the context of merger assessment, a HHI between 1,000 and 2,000 is not viewed as problematic if a merger increases the HHI by less than 250 and a HHI of more than 2,000 is viewed as not problematic only if the merger increases the HHI by less than 150 (see Official Journal of the European Union, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentration between undertakings*, 2004/C 31/03, 2nd May 2004).

3.3 The level of concentration in European listed company audit markets in 2004

Concentration of statutory audit services to companies in the main index of the stock exchange

The first fact to observe from Table 4 overleaf is that, in 2004, the level of concentration of the statutory audit market measured in terms of audit mandates was very high in practically all EU Member States when one focuses on the companies listed in the main index only.[18] In our analysis, we consider only domestic companies listed on the national stock exchange and exclude foreign companies which have a dual listing on that particular stock exchange.

- In France and Denmark[19], many companies are required to appoint two separate auditors. As a result, the number of audit mandates is double that of the number of large companies included in the main index of the national stock exchange, and a number of middle-tier firms provide statutory audit services to larger companies;
- This situation explains why the four-firm concentration ratio is 73 in the case of France and 78 in the case of Denmark while, for all the other 23 EU Member States, this concentration ratio ranges from 83 to 100;
- In 14 of these 23 Member States (Czech Republic, Estonia, Greece, Germany, Spain, Ireland, Italy, Cyprus, Lithuania, Luxembourg, Malta, Netherlands, Sweden and UK) the four-firm concentration ratio is in the range of 90 to 100;
- The HHI concentration measure yields a similar picture. In all but two Member States (France and Denmark), the HHI is well above the level that gives rise to concerns.

Concentration of statutory audit services to all companies listed on the regulated market of the stock exchange

Secondly, concentration in terms of the number of audit mandates drops somewhat when one focuses on all companies listed on the main regulated market (see Table 5). This reflects the fact that a greater number of audit firms provide statutory audit services to listed companies outside the top-tier companies.

[18] The list of companies in the main index is generally as of the week of 26th June, 2006.

[19] Since 1st January 2005, listed companies are no longer legally required to appoint two auditors in Denmark.

Table 4 Concentration in EU statutory audit markets – companies in main index of main national stock exchange

Country	Number of companies	Concentration indices by number of mandates (% except HHI)				
		C1	C2	C4	C8	HHI
BE	19	25	50	88	-	2031
CZ	9	40	60	100		3000
DK	19	26	48	78	-	1833
DE	30	53	87	97	-	4022
EE	10	30	50	90	-	2200
EL	20	40	60	90	-	2550
ES	35	50	80	97	100	4100
FR	40	30	46	73	96	1818
IE	20	45	70	95	100	3000
IT	40	35	60	100	-	2662
CY	20	50	85	95	-	3800
LV	5	40	80	-	-	3600
LT	21	29	52	95	-	2340
LU	11	31	54	92	-	2307
HU	12	64	91	-	-	4876
MT	14	43	71	100	-	3163
NL	23	32	60	100	-	2608
AT	22	42	71	83	-	2743
PL	20	44	70	-	-	3150
PT	20	50	65	85		3000
SI	15	40	53	73	-	2000
SK	5	40	80	-	-	3600
FI	25	56	80	-	-	3984
SE	30	34	66	100	-	2792
UK	100	43	65	99	-	2912

Source: London Economics calculations using data from Amadeus and annual reports of financial institutions and companies included in the main stock market indices. Oxera (2006) for the UK.

In a number of EU Member States, the four-firm concentration ratio based on the number of mandates falls to 70 or below (Belgium, Czech Republic, Denmark, Germany, Greece, France, Hungary, Latvia, and Poland).

Similarly, the HHI drops markedly in these countries and a number of additional countries (Ireland, Lithuania and Luxembourg) to below the threshold at which concentration concerns arise.

Thirdly, when the market shares of audit firms are computed on the basis of the revenues of the companies being audited, or audit fees when such were available, the picture is one of high concentration even in the case where all companies listed on the regulated exchange market are included in the sample (see Table 5). In 2004, the HHI based on such market shares was above the "concentration" threshold in all but three EU Member States.

Table 5 Concentration in EU statutory audit - all companies listed on regulated national stock exchange.

Country	Number of companies**	Concentration indexes by number of mandates (% except for HHI)					Concentration indexes by revenues audited[1] or fees received				
		C1	C2	C4	C8	HHI	C1	C2	C4	C8	HHI
BE	135	27	43	70	84	1431	48	69	96	97	3119
CZ	36	29	50	65	82	1540	56	76	94	99	3754
DK	175	21	40	68	86	1314	30	45	77	98	1824
DE*	541	19	36	55	66	918	57	82	92	96	3976
EE	16	33	60	93	-	2444	34	61	94	-	2499
EL	292	34	48	66	84	1600	31	51	73	97	1784
ES	115	44	70	91	97	2854	78	92	99	100	6334
FR	489	15	24	42	58	551	28	45	71	90	1577
IE	65	25	51	80	89	1756	41	81	99	100	3488
IT	276	27	53	88	93	2053	34	62	100	-	2651
CY	141	30	57	76	87	1867	30	59	90	95	2465
LV	40	13	20	30	50	500	30	53	81	93	1894
LT	43	23	44	79	93	1644	68	77	93	100	4802
LU	27	30	48	74	-	1604	46	79	96	-	3389
HU	36	25	44	64	75	1280	60	80	99	99	4247
MT	14	43	71	100	-	3163	63	99	100	-	5328
NL	140	25	50	89	96	2147	29	57	100	-	2551
AT	44	40	58	78	91	2212	43	78	93	96	3198
PL	236	15	23	41	61	597	56	69	83	94	3417
PT	52	42	62	73	83	2300	64	81	93	99	4553
SI	15	40	53	73	-	2000	49	89	100	100	4073
SK	7	29	57	100	-	2040	95	98	100	-	8998

Table 5 Concentration in EU statutory audit - all companies listed on regulated national stock exchange.

Country	Number of companies**	Concentration indexes by number of mandates (% except for HHI)					Concentration indexes by revenues audited[1] or fees received				
		C1	C2	C4	C8	HHI	C1	C2	C4	C8	HHI
FI	148	43	70	94	97	3038	74	94	100	-	5893
SE	272	30	56	93	99	2370	37	67	99	100	2766
UK	316	37	61	98	100	2654	36	59	100	-	2660

Notes: (1) Revenues audited are the gross revenues of companies being audited as reported in the companies' annual reports. *= figures based on fees received by the auditing company in 2005 as reported in the annual reports of the companies. ** = number of companies for which information could be found. UK FTSE 350 only, Germany Frankfurt All Share list only.
Source: London Economics calculations using data from Amadeus and annual reports of companies and financial institutions listed on the respective national stock exchange. Oxera (2006) for the UK.

Overleaf in Table 6, we present separately, for information, the concentration measures based on audit fees for the few countries for which such data are available. In all cases, the concentration is high.

Table 6: Concentration (based on audit fees) in EU statutory audit - all companies listed on regulated national stock exchange 2004

Index	Denmark	France	Germany	Portugal	UK
C1	43%	35%	57%	62%	37%
C2	63%	60%	82%	78%	64%
C4	89%	86%	92%	94%	99%
C8	98%	97%	96%	99%	100%
HHI	2714	2240	3976	4271	2713

Note: Germany 2005.

Source: London Economics calculations using data from Amadeus and annual reports of companies and financial institutions listed on the respective national stock exchange. Oxera (2006) for the UK.

As the number of companies listed on the regulated markets of the various stock exchanges varies markedly across stock exchanges, differences in concentration patterns may reflect, to some extent, differences in the size of the population.

Therefore, below in Table 7, we also present estimates of the HHI, based on the number of audit mandates, for the 20 largest, 50 largest, 100 largest, 150 largest, 200 largest and 300 largest companies listed on the regulated market of the various stock exchanges.

The size of the companies is measured by either turnover in the case of non-financial companies or gross operating income in the case of financial institutions.

In the case of a few smaller markets, the number of companies listed on the regulated market is smaller than 20 and therefore, no HHI figures are reported.

The data in Table 7 clearly show that concentration, in terms of audit mandates, declines as the population of companies increases, reflecting the fact that a number of firms other than Big-4 firms provide statutory audit services to companies other than the largest companies in each country.

The data also show that the degree of concentration varies markedly across Member States. A comparison of changes in the HHI between the group of the 20 largest companies and the group of the 100 largest companies shows that:

- Concentration declines rapidly to below the "concentration concern" threshold in the case of Denmark, Greece, France, and Poland;
- Concentration declines more moderately to about or below the "concentration concern" threshold in Belgium, Germany and Cyprus;

Table 7: HHI in EU statutory audit market by size (turnover) of companies - all companies listed on regulated national stock exchange[1] - 2004

	Top 20	Top 50	Top 100	Top 150	Top 200	Top 300
BE	2650	2288	1843	-	-	-
CZ	2325	-	-	-	-	-
DK	1795	1735	1560	1355	-	-
DE	4075	2464	1904	1541	1448	1318
EE	-	-	-	-	-	-
EL	1750	1528	1452	1587	1823	-
ES	5150	3568	3003	-	-	-
FR	1951	1480	1252	1082	844	669
IE	3400	2288	-	-	-	-
IT	2650	2640	2614	2535	2462	-
CY	2250	2016	1625	-	-	-
LV	1000	-	-	-	-	-
LT	1950	-	-	-	-	-
LU	2100	-	-	-	-	-
HU	2575	-	-	-	-	-
MT	-	-	-	-	-	
NL	2925	2971	2488	-	-	-
AT	3100	-	-	-	-	-
PL	2400	1576	1084	848	-	-
PT	3225	2080	-	-	-	-
SI	-	-	-	-	-	-
SK	-	-	-	-	-	-
FI	5550	4104	3328	-	-	-
SE	3150	2556	2647	2628	2202	-
UK	3000	3048	2807	2728	2840	2684

Notes: Because turnover is used to classify companies in this table, the list of the top 20 companies differs in some cases slightly from that of the stock market indices made up of 20 companies. Therefore, the concentration figures reported in the present table may differ from those shown in Table 4.
Source: LE calculation using Amadeus and companies' and financial institutions' annual reports

- Concentration declines moderately but remains above the "concentration concern" threshold in the case of Spain, Italy, Netherlands, Finland, Sweden and the UK.

Concentration of statutory audit services to all public companies

Finally, when one includes all public companies in the statutory audit market, concentration often drops even more when market shares are based on audit mandates, reflecting the fact that in many countries non-Big-4 firms tend to provide mainly statutory audit services to non-listed and smaller listed companies (see Table 9).

The information regarding all public companies is drawn from the Amadeus databank and presented below in Table 8. Unfortunately, the Amadeus databank only provides an incomplete listing of public companies in some countries and the name of the auditor having undertaken the statutory audit of a company for only 13 EU Member States.

Table 8. Concentration in EU statutory audit market - all public companies 2004

Country	Number of companies	Concentration estimates based on the number audit mandates					Concentration estimates based on the size of the companies being audited				
		C1	C2	C4	C8	HHI	C1	C2	C4	C8	HHI
BE	140	21%	31%	49%	62%	788	47%	65%	85%	96%	2797
CZ	37	11%	22%	27%	-	284	25%	49%	56%	-	1232
DK	126	26%	48%	74%	87%	1611	33%	58%	87%	99%	2265
EE	15	33%	60%	93%	-	2444	34%	61%	94%	-	2499
EL	318	42%	60%	78%	92%	2328	37%	57%	77%	96%	2077
ES*	1805	16%	31%	47%	63%	696	-	-	-	-	-
IE	57	28%	49%	70%	81%	1571	22%	40%	56%	57%	1033
CY	124	30%	59%	76%	87%	1951	37%	74%	86%	94%	2826
LV	36	11%	19%	33%	56%	540	30%	50%	78%	90%	1761
LT	39	23%	46%	79%	92%	1689	74%	88%	96%	-	5712
NL	183	23%	46%	85%	92%	1832	34%	67%	99%	100%	2923

Table 8. Concentration in EU statutory audit market - all public companies 2004

Country	Number of companies	Concentration estimates based on the number audit mandates					Concentration estimates based on the size of the companies being audited				
PL	242	16%	24%	41%	62%	622	55%	69%	83%	94%	3373
FI	127	38%	60%	82%	-	2283	74%	85%	92%	-	5574
UK	1850	18%	33%	61%	81%	1057	38%	63%	98%	99%	2699

* = Concentration estimates based on revenues are unavailable as the Amadeus database does not provide the information for a large number of companies.

Source: London Economics calculations using data from Amadeus

Table 9: Comparison of HHI estimates, companies in main index, all listed companies and all public companies

Country	Companies in the main index	All listed companies	All public companies
BE	2031	1431	788
CZ	3000	1541	284
DK	1833	1300	1611
EL	2550	1600	2328
ES	4100	2854	696
IE	3000	1756	1033
CY	3800	1867	1951
LV	3600	500	540
LT	2340	1644	1689
NL	2608	2147	1832
PL	3150	597	670
SF	3984	3038	2283
UK	2912	2654	1057

Source: London Economics

3.4 Trends in audit market concentration

There exist very few publicly available data that would allow one to assess how concentration has evolved over time. This information is reported in Table 10 overleaf. The key points to note are that, even in the late 1980s, the market for audit services was already relatively concentrated, albeit significantly less than at the present time.

A significant increase in concentration occurred in 1998 with the creation of PwC out of the merger of Coopers & Lybrand and Price Waterhouse, and in 2002 with the disappearance of Arthur Andersen.

That being said, the trend towards larger scale among the major audit firms is not new and the current market situation is to be viewed as the result of a process which started in the late 1980s (see Table 10).[20]

Table 10 Trends in auditor market concentration (%)

	U.S.(1)		Denmark		France		Germany		UK	
	C1	C4	C1	C4	C1	C4	C1	C4	C1	C4
1988	21	63								
1990										
1991										
1992										
1993										
1994			54	86						
1995			46	80					27.5	79.5
1996			43	82			30.3	80.6	27.3	78.7
1997	19	71	41	80					24.6	77.7
1998			40	81			33.5	85.9	42.2	90.5
1999			43	87					38.9	87.4
2000			43	88			33.7	85.3	39.4	86.9
2001			30	88					38.5	87.3
2002	34	99	44	91	39.5	84.5			39.2	97.3
2003			41	89	35.2	87.7			40.2	97.6
2004			43	89	34.6	86.2			36.7	96.8

Notes: U.S. concentration figures based on sales of public companies being audited; Denmark concentration figures based on audit fees from all listed companies, France concentration figures based on

[20] In fact, the trend towards growing concentration in the audit market appears to be date back well into the first half of the 20th century (see, for example, Richardson, 2001). However, for the purpose of the present analysis, the more recent trends are the most relevant.

audit fees from companies in the CAC40; Germany, concentration figures based on turnover of a sample of more than 2000 companies; UK, concentration figures based on audit fees paid by a sample of 739 companies representing about ¾ of the FTSE350 and FTSE Small Cap and a shade under 60% of the FTSE fledging index.
Source: U.S. (GAO, 2003), Denmark (LE calculations), France (LE calculations), Germany (Grothe, 2005) and UK (Oxera, 2006)

The concentration levels and the trends in such levels, presented in this sub-section, raise the question of why concentration has increased so much.

The simple answer is that the current level of concentration is the result of the various mergers.

However, such an answer does not address the rationales underlying these mergers. Nor does such an answer address the reasons why companies prefer to remain with one of the remaining major audit firms and thus contribute as well to maintaining a high level of concentration in the audit market.

Moreover, focusing only on mergers fails to shed any light on the behaviour of the middle-tier firms that could potentially make inroads into the audit market segment held by the Big-4 firms.

These points are explored in greater detail in the subsequent subsections.

Table 11: History of mergers among major audit firms

Year	Number of major firms in the market	Structural changes in the audit sector	
		Mergers	**Dissolution**
1986	**Big 8:** Arthur Andersen Peat Marwick Mitchell Coopers & Lybrand Ernst & Whinney Price Waterhouse Arthur Young Deloitte Haskins & Sell Touche Ross		
1987	**Big 8:** Arthur Andersen KPMG Peat Marwick Coopers & Lybrand Ernst & Whinney Price Waterhouse Arthur Young Deloitte Haskins & Sell Touche Ross	Peat Marwick Mitchell with KMG	
1989	**Big 6**: Arthur Andersen Ernst & Young Deloitte & Touche KPMG Peat Marwick Coopers and Lybrand Price Waterhouse	Ernst & Whinney and Arthur Young Deloitte Haskins & Sell and Touche Ross	
1998	**Big 5:** Arthur Andersen PricewaterhouseCoopers Ernst & Young Deloitte & Touche KPMG	Coopers & Lybrand and Price Waterhouse	
2002	**Big 4:** PricewaterhouseCoopers Ernst & Young Deloitte & Touche KPMG		Arthur Andersen

Source: GAO (2003)

4 Specialisation of the Big-4 firms

It is often argued that, even within the market segment served by the Big-4 firms, a certain market segmentation occurs reflecting the specialisation of the Big-4 firms in certain areas. In particular, it is often asserted that some of the Big-4 firms are specialised in the audit of companies operating in the financial sector.[21]

While it would be beyond the scope of the present study to undertake a detailed specialisation analysis of all the statutory audit mandates held by the Big-4 firms, we present below in Table 12 the market shares (based on the number of mandates) of the Big-4 firms in the financial and non-financial sector.

The data reported in Table 12 confirm the importance of the Big-4 networks in the financial sector. On average, across the EU25, the Big-4 hold practically 90% of the audit mandates of financial institutions (banks and insurance companies) listed on the regulated markets of the stock exchanges and, in a number of countries, the Big-4 hold all the audit mandates of financial institutions. It should be noted that the market share figures for Denmark and France are about 50% in the table below due to the fact that companies in these countries appoint two auditors and that therefore the number of mandates is twice that of financial institutions.

In contrast, they hold only slightly more than 2/3 of all the audit mandates of non-financial institutions listed on regulated stock markets.

Table 12: Share of mandates (in %) held by Big-4 firms, financial (banks and insurance companies) and non-financial companies

Country	DTT		E&Y		KPMG		PwC	
	Fin.	Non-Fin.	Fin.	Non-Fin.	Fin.	Non Fin.	Fin.	Non-Fin.
BE	33.3	26.7	0.0	15.6	33.3	15.6	33.3	11.1
CZ	100	15.6	0.0	8.8	0.0	5.8	0.0	29.4
DK	17.1	17.9	7.9	6.6	13.2	21.9	13.2	13.1
DE	5.5	5.1	5.5	18.4	41.7	17.6	27.8	13.7
EE	-	20.0	-	13.3	-	26.7	-	33,3
EL	5.0	3.6	15.0	6.1	20	2.9	20.0	7.2

[21] See Grothe (2005) op. cit. for an overview of studies focusing on specialisation in the U.S. audit market.

Table 12: Share of mandates (in %) held by Big-4 firms, financial (banks and insurance companies) and non-financial companies

	DTT		E&Y		KPMG		PwC	
	Fin.	**Non-Fin.**	**Fin.**	**Non-Fin.**	**Fin.**	**Non Fin.**	**Fin.**	**Non-Fin.**
ES	46.1	44.1	7.7	9.8	-	13.7	46.1	22.5
FR	12.5	9.0	15.6	14.7	12.5	9.3	15.6	8.6
IR	0.0	14.8	33.3	16.7	33.3	27.8	33.3	27.8
IT	40.7	23.4	25.9	20.7	16.7	13.0	14.8	28.4
CY	14.3	11.1	28.6	6.7	28.6	30.4	14.3	27.4
LV	0	5.6	0.0	5.6	50.0	2.8	50.0	11.1
LT	25.0	21.0	25.0	16.0	25.0	24.0	25.0	18.0
LU	14.3	35.0	14.3	10.0	14.3	15.0	42.9	10.0
HU	25.0	18.1	50.0	21.9	0.0	6.3	0.0	15.6
MT	17.0	12.5	0.0	12.5	50.0	37.5	33.0	37.5
NL	11.1	17.3	44.4	21.0	22.2	25.6	22.2	24.8
AT	20.0	17.9	0.0	7.7	40.0	11.0	20.0	14.8
PL	5.9	8.6	11.8	8.2	53.0	5.0	11.8	5.9
PT	20.0	47.6	20.0	2.0	20	2.0	30.0	16.7
SI*	-	13.3	-	13.3	-	40.0	-	6.7
SK	50.0	0	50.0	20.0	0	0	0	0
FI	0	2.9	50.0	19.0	25.0	27.0	25.0	44.5
SE	11.8	11.5	29.4	25.3	35.3	24.9	20.6	30.8
UK	17.2	25.0	6.9	16.0	27.6	21.0	44.9	36.0
EU-25	**22.5**	**17.1**	**18.1**	**13.5**	**24.4**	**17.1**	**24.7**	**19.2**

Source: London Economics calculations using data from Amadeus and annual reports of companies and financial institutions included in the main stock market indices. Oxera (2006) for the UK.

5 What factors have led to the current patterns of concentration?

5.1 Context

As was noted earlier, the immediate causes of the current level of concentration in the audit market are the various mergers that took place over the last 20 years among main audit firms.

But, in order to understand why such concentration levels persist it is important to review the following:

1. Why the large firms have merged;
2. Why companies remain with the large audit firms despite the existence of an active middle-tier firm segment;
3. Whether middle-tier firms would be able and willing to enter the market of the large audit firms.

The survey of audit firms and companies aimed to shed some light on these factors and the survey answers are presented in the subsequent sections. But, first we provide a brief overview of the relevant literature.

5.2 Review of the literature

There is a broad consensus in the literature that three key structural factors have contributed to the growing concentration in the audit market.[22]

- First, globalisation and the growing geographical spread of companies, in particular the large and very large companies changed the demand for the type of audit services by these companies. Increasingly, these companies sought audit service providers able to cover the whole geographical range of their operations.

  Extensive worldwide networks of audit firms are required to provide the audit services sought by these large and very large companies. As the regional presence among the Big-8 firms varied markedly, mergers among firms with complementary regional networks was viewed as a means to respond to the clients' changing needs.

  For example, in the 1980s outside the United States, Ernst & Whinney had a strong presence in the Pacific Rim countries while Arthur Young did not. Similarly, Price Waterhouse was well established in

[22] The discussion in this section is largely based on GAO (2003).

South America while Coopers & Lybrand was mainly present in Europe.

- Second, technological developments and innovations also played a major role. The move towards computer-based accounting systems and the development of new auditing methods required large capital commitments while firms were largely dependent upon the partner-generated capital and could not under the prevailing partnership structure raise outside funds. Achieving a large scale was considered necessary to be able to spread the infrastructure costs over a broader capital base.
- Third, in response to the growing diversification and complexity of the companies' needs, some of the larger audit firms viewed it as necessary to build up industry-specific or technical expertise to meet clients' needs. As each of the original Big-8 firms had different strengths and specialisations, mergers among these firms were considered as a means of broadening the range of audit services to the market.

Officials of the Big-4 firms furthermore told the GAO, when it undertook its 2003 study, that the broader capital bases also allowed firms to invest more in staff training and development, factors considered as being critical for meeting their clients' evolving demands.

Finally, these officials also told the GAO that greater scale was, in addition, expected to generate operational efficiencies that could offset pressures on margins arising from increased competition.

To summarise, three main factors are thought to have been the drivers of the mergers among the Big-8:

- Globalisation and growing geographical spreads of clients;
- Technological innovation combined with no access to external capital;
- The need to develop deeper industry and technical expertise.

In the next sub-section we examine whether these factors are still at play today in the audit markets in the EU25.

5.3 Survey results

How do audit firms compete?

To shed some light on the reasons for the persistence of the high degree of concentration in the audit market, the surveys of audit firms and companies asked a few questions about how audit firms compete and the reason(s) for the observed increase in market concentration. The answers to these questions are reported in Table 13 to Table 18.

First, the survey aimed to identify the most important factors on which audit firms compete. Audit firms typically view all the potential factors listed in Table 13 as important. Indeed, a number of firms added comments in their replies noting that all the factors are important and that audit firms compete on a bundle of these factors or all of them.

That being said, it is important to note that the Big-4 firms noted that they have broadly the same geographical and industry capacities, skills and reputation, and, that, therefore, they compete essentially on price amongst each other in the market place. Obviously, individual mandates will be won on the basis of factors such as the quality, expertise and experience of the proposed audit team and engagement partners.

This explains why price is rated as the most important factor in the answers from the Big-4 audit firms while middle-tier firms view reputation as the most important driver.

Both groups of firms agree that, in addition to price, reputation and quality in terms of both ability/capacity and reliability are the most important factors.

Of interest is the fact that the geographical spread is viewed as the least important factor by both groups of firms. However, this common rating is likely to mask different perspectives. As already noted above, the geographical spread of the Big-4 is very similar and, as such, is not a major factor giving one or the other firm a competitive advantage. In contrast, the geographical spread of middle-tier firms is often more limited. But, according to a number of representatives of middle-tier firms, the type of clients sought by middle-tier firms generally have a lesser need for a wide geographical spread and hence this is less of a competition driver.

The sample of companies has a largely similar perspective on how audit firms compete. Quality in terms of ability/capacity is viewed as the most important factor, followed by quality in terms of reliability and price. The least important factors are the geographical spread of the audit firm and the size of the network.

However, these responses mask a great deal of heterogeneity among companies. While quality in terms of ability/capacity is viewed by companies of all sizes as the single most important factor on which audit firms compete, there is no consensus on the importance of the other factors (see Table 14 and Table 15):

- Companies with annual turnover of less than €100 million view the geographical spread of the audit firm, the price and the reputation of the audit firm as the least important competition drivers;
- In contrast, for companies with annual turnover of more than €100 million, reputation (except for the very large firms) and price are much more important competition drivers;
- Interestingly, the size of the network and the geographical spread of the networks are generally viewed as being relatively less important;

- Reputation is viewed as the single most important factor by companies from the financial sector and from the "other" group while quality in terms of ability/capacity and reliability, and price are typically viewed as very important factors by all sectors.

Table 13: How do audit firms compete – average rating on a scale of 1 (least important) to 5 (most important)

	Replies from		
Competition factors	Big-4 firms	Middle-tier firms	Companies
Price	4.4	3.6	3.6
Quality in terms of ability/capacity	4.0	3.5	4.1
Quality in terms of reliability	3.8	3.7	3.7
Reputation/brand name	4.2	3.9	3.6
Geographical spread of audit firm	3.1	2.9	3.3
Industry knowledge	3.6	3.1	3.5
Staff knowledge	3.5	3.1	3.4
Size of the network	3.2	3.2	3.0

Source: London Economics survey of audit firms and companies

Table 14: How do audit firms compete – Company responses by company turnover
average rating on a scale of 1 (least important) to 5 (most important)

Factors	Company turnover			
	<€100m	**€100m-€1,000m**	**€1,000m-€10,000m**	**>€10b**
Price	3.2	3.7	3.9	3.6
Quality in terms of ability/capacity	4.0	3.9	4.3	4.4
Quality in terms of reliability	3.7	3.8	3.8	3.5
Reputation/brand name	3.3	3.8	4.1	3.1
Geographical spread of audit firm	3.0	3.1	3.5	3.3
Industry knowledge	4.0	3.0	3.6	3.6
Staff knowledge	4.0	3.1	3.3	3.6
Size of the network	3.5	3.1	3.2	2.7

Source: London Economics survey of companies

**Table 15: How do audit firms compete – Company responses broken down by sector–
average rating from 1 (least important) to 5 (most important)**

Factors	Sectors			
	Business services	**Financial services**	**Manufact.**	**Other**
Price	3.7	4.0	3.4	3.9
Quality in terms of ability/capacity	4.0	4.2	4.2	3.9
Quality in terms of reliability	4.1	4.0	3.9	2.5
Reputation/brand name	3.3	4.4	3.2	4.1
Geographical spread of audit firm	3.8	3.0	3.4	3.3
Industry knowledge	3.8	3.5	3.2	3.4
Staff knowledge	3.4	3.3	3.9	2.5
Size of the network	3.4	2.8	3.0	3.1

Source: London Economics survey of companies

Factors having contributed to the current concentration levels

Somewhat in contradiction to the previous responses, Big-4 and middle-tier firms and companies agree that changes in client needs are the most important factor explaining the current level of concentration in the audit market (see Table 16 to Table 18).

This probably reflects the view that changes in client needs encompass much more than the growing geographical spread of companies. Factors such as specialised skills and knowledge are also likely to be very important.

This point is reinforced by the fact that Big-4 firms and middle-tier firms rate "greater emphasis on specialised expertise of staff" respectively as the third most important factor or as the most important factor as well.

Economies of scale are also viewed as important, especially by companies with a turnover of more than €1 billion and/or from the financial services and business sectors.

The disappearance of one of the major audit firms is viewed only by respondents from Big-4 firms and larger companies as being one of the most important drivers of the present levels of concentration.

Table 16: Importance of various factors in having contributed to current concentration levels–average rating on a scale of 1 (least important) to 5 (most important)

	Replies from		
Factors	Big-4 firms	Middle-tier firms	Companies
Economies of scale	3.5	3.3	3.8
Economies of scope	3.1	3.3	3.6
Risk management	3.1	2.8	2.8
Changing client needs	4.2	3.5	4.0
Changes in accounting standards	2.4	3.1	2.9
Other regulatory changes	3.3	2.8	2.6
Disappearance of one of the major audit firms	3.8	2.8	3.5
Greater emphasis on detailed industry knowledge	3.6	3.2	3.0
Greater emphasis on specialised expertise of staff	3.7	3.5	3.2

Source: London Economics survey of audit firms and companies

Table 17: Importance of various factors in having contributed to current concentration levels – Company responses breakdown by turnover average rating on a scale of 1 (least important) to 5 (most important)

Factors	Breakdown by company turnover			
	<€100m	**€100m-€1,000m**	**€1,000m-€10,000m**	**>€10b**
Economies of scale	3.3	3.3	4.4	4.0
Economies of scope	2.8	3.5	3.8	3.7
Risk management	3.5	2.9	2.7	2.6
Changing client needs	4.0	3.9	4.0	4.1
Changes in accounting standards	3.6	3.0	3.0	2.3
Other regulatory changes	3.0	2.4	3.0	1.9
Disappearance of one of the major audit firms	3.3	3.2	3.9	3.2
Greater emphasis on detailed industry knowledge	3.3	2.9	3.0	3.0
Greater emphasis on specialised expertise of staff	2.6	3.4	3.6	2.8

Source: London Economics survey of companies

Table 18 Importance of various factors in having contributed to current concentration levels – Company responses broken down by sector– average rating from 1 (least important) to 5 (most important)

Factors	Sectors			
	Business services	**Financial services**	**Manufact.**	**Other**
Economies of scale	4.0	4.1	3.6	3.9
Economies of scope	4.0	3.3	3.4	3.7
Risk management	3.0	2.6	2.8	3.0
Changing client needs	4.0	4.0	3.9	4.2
Changes in accounting standards	2.3	3.0	3.4	2.3
Other regulatory changes	2.1	2.5	3.2	1.6
Disappearance of one of the major audit firms	3.4	3.8	3.2	3.8
Greater emphasis on detailed industry knowledge	2.3	3.6	2.9	3.2
Greater emphasis on specialised expertise of staff	3.1	3.2	3.5	2.9

Source: London Economics survey of companies

Key message

To conclude, the factors that are judged to have led to the current level of concentration in the audit market appear to be still largely at play today.

At issue, however is whether middle-tier firms could gain a larger share of the market. This raises the issue of barriers to entry, which are addressed in the next sub-section.

6 Barriers to entry into the audit market segment served by the Big-4 firms

6.1 Context

So far the information provided in the present report has shown that concentration in the audit market is high, especially in the market segment of the largest listed companies.

In fact, there is a broad consensus in the literature that the audit market is segmented and that the larger firms (Big-8, Big-6 or Big-4 depending on the time period) command an audit premium for their services.

Before reviewing the results of the part of the survey of audit firms and companies focusing on barriers to entry, we provide a brief overview of the findings from the literature on audit fees and market segmentation.

6.2 Review of the literature

In a review of 20 studies of the impact of auditor reputation on audit fees, Mozer (1996) found that, according to the majority of these studies, the Big-6 commanded an audit fee premium of between 16% and 37%. It should be noted that 5 of the studies reviewed by Mozer, however, did not find such a premium. Differences in country coverage, time period and precise methodology explain why a small number of results differ from the majority of the findings.

More recent studies by Gul (1999), Ireland and Lennox (2002) and Asthan et al. (2004) also found a positive audit fee premium for the major audit firms.

While the literature is not entirely conclusive on whether large audit firms such as the Big-4 firms command a reputation premium in the market place, the majority of the studies points in that direction, suggesting that the market for statutory audits of listed companies is indeed segmented between that part of the market served mainly, if not exclusively, by the Big-4 firms and the remainder of the market.

6.3 Survey results

To explore further the issue of market segmentation and potential entry by middle-tier firms into the market segment served by the Big-4 firms, the surveys to audit firms and companies asked respondents to assess the importance of a number of potential barriers to entry.

Overall, all three groups of respondents judge a few of the barriers to be particularly important, although the precise rating and ranking varies

somewhat across the three groups of respondents. The key barriers are reviewed in greater detail below.

Table 19: Importance of various barriers to entry into the statutory audit market of large companies – average rating from 1 (least important) to 5 (most important)

	Replies from		
Barriers	Big-4 auditors	Middle-tier auditors	Companies
Audit firms are too small and lack capacity to handle audit assignments undertaken typically by large audit firms	4	3.2	4.3
Audit firms cannot provide services covering many countries	3.7	3	4.3
Reputation of big four audit firms	3.9	4	3.9
Client switching inertia	1.8	3.2	3.1
Audit liability risk	3.6	2.6	3.1
Lack of adequate audit liability insurance	3.5	2.5	2.9

Source: London Economics survey of audit firms and companies

Table 20: Importance of various barriers to entry into the audit market of large companies – Company responses breakdown by turnover average rating on a scale of 1 (least important) to 5 (most important)

Factors	Breakdown by company turnover			
	<€100m	**€100m-€1,000m**	**€1,000m-€10,000m**	**>€10b**
Audit firms are too small and lack capacity to handle audit assignments undertaken typically by large audit firms	4.2	3.7	4.5	4.4
Audit firms cannot provide services covering many countries	4.0	4.2	4.2	4.0
Reputation of big four audit firms	4.4	3.8	4.0	3.5
Client switching inertia	3.2	2.9	3.4	2.4
Audit liability risk	3.0	3.0	3.5	2.8
Lack of adequate audit liability insurance	2.7	2.5	3.5	2.3

Source: London Economics survey of companies

Table 21: Importance of various barriers to entry into the audit market of large companies – Company responses broken down by sector– average rating from 1 (least important) to 5 (most important)

Factors	Sectors			
	Business services	**Financial services**	**Manufact.**	**Other**
Audit firms are too small and lack capacity to handle audit assignments undertaken typically by large audit firms	4.0	4.4	4.1	4.3
Audit firms cannot provide services covering many countries	4.0	3.6	4.3	4.6
Reputation of big four audit firms	3.7	4.4	3.7	3.8
Client switching inertia	3.3	2.5	3.2	2.8
Audit liability risk	3.8	3.1	2.8	3.1
Lack of adequate audit liability insurance	3.3	3.2	2.6	2.1

Source: London Economics survey of companies

Reputation, capacity and geographical coverage

Focusing first on middle-tier firms, reputation is viewed as being by far the most important barrier to entry (see Table 19). In follow-up discussions with middle-tier firms the importance of this factor was explained by the fact that large clients tend to favour the Big-4 firms because their reputation makes such a choice easier to explain and defend vis-à-vis various stakeholders. Unfortunately, reputation requires time to build up and this is not a barrier that can easily be addressed through policy action.

The potential clients of middle-tier firms, namely smaller companies, share this perspective. Larger companies with an annual turnover of more than €100 million also view reputation as a major barrier to entry, although somewhat less important than capacity and geographical coverage of middle-tier firms, two barriers which middle-tier firms tend to rate as somewhat less important than reputation. Companies from the various sectors hold the same view although the precise ranking of the three factors varies somewhat across the various sectors (see Table 20 and Table 21).

Reputation is also viewed as the most important barrier to entry by U.S. companies, followed closely by lack of capacity and coverage.

The Big-4 firms hold broadly the same views as companies about the major obstacles middle-tier firms face in entering the market of statutory audits for large companies.

Client inertia

Client inertia and limited switching is in many markets a major barrier to entry. In the case of statutory audit services, both middle-tier firms and companies view this as a significant barrier, although less important than those discussed above. This is explainable by the fact that few switches actually occur.

For example, in only 13% of companies responding to the company questionnaire has the current auditor served for less than 3 years (see Table 22). Moreover, more than half of the companies reported that their auditor has served the company for more than 7 years.

Limited switching is also observed among the U.S. companies. Altogether, only 36% of the U.S. companies responding to the survey had switched auditor over the last 6 years.

Table 22: Number of years the current auditor has served as auditor of the company

Number of years	Share of respondents
1 to 3 years	13%
4 to 6 years	33%
7 to 10 years	20%
11 to 15 years	2%
More than 15 years	31%

Source: London Economics survey of companies

Interestingly, if one breaks down the company responses by company size, one observes that the degree of inertia increases with the size of the company. While only 34% of companies with a turnover of less than €100m used the same auditor for more than 7 years, this figure grows steadily to 72% in the case of very large companies with a turnover in excess of €10billion (see Table 23).

A similar pattern was noted in the Oxera study (2006) of the UK market where, in 2004, only 1% of the FTSE100 and 2% of the FTSE250 companies had switched auditors while 3.1% of the FTSE Small Cap and 3.8% of the FTSE Fledgling companies had done so.[23]

[23] Oxera (2006) p. 43.

Regarding the sectoral breakdown, the inertia appears to be more pronounced in the case of non-financial companies (see Table 24).

Table 23: Number of years current auditor has served as auditor of the company - responses by company size

Number of years	Company turnover			
	<€100m	€100m-€1,000m	€1,000m-€10,000m	>€10b
1 - 3	33%	7%	24%	0
4 – 6	33%	43%	29%	27%
7 – 10	17%	14%	21%	27%
>10	17%	36%	29%	45%

Source: London Economics survey of companies

Table 24: Number of years current auditor has served as auditor of the company - responses by sector

Number of years	Sectors	
	Financial services	Other
1 – 3	19%	12%
4 – 6	54%	26%
7 – 10	9%	24%
> 10	18%	38%

Source: London Economics survey of companies

Willingness to use a middle-tier firm

To further explore the potential barriers to entry faced by middle-tier firms, companies were asked in the survey to indicate their willingness to use the services of an audit firm that is not a Big-4 firm.

The survey results reported in Table 25[24] clearly show that the companies' willingness to consider using a middle-tier firm declines rapidly with the size of the company. While, at one end of the spectrum, about two-thirds of

[24] The questionnaire explicitly asked companies whether they were using the audit services of a Big-4 firm and, in the case of a positive answer, whether they would consider shifting to a middle-tier firm (see questions 18 and 19 in Questionnaire to companies at Annex 3).

smaller companies indicated that they would be prepared to use the services of a non-Big-4 firm, at the other end, only 15% of the largest companies are prepared to do so.

In terms of sector, the aversion to using the audit services of a non-Big-4 firm was particularly pronounced in the case of business services companies and financial institutions.

In sharp contrast, a majority of U.S. firms of all sizes indicated that they would be willing to use the services of a firm that is not a Big-4 firm (see Table 26). This may be due to the fact that the typical U.S. company may have a smaller international component than a E.U. company of similar size.

Similarly, the U.S. financial services sector appears less reluctant to consider using the services of a middle-tier firm (see Table 28).

Table 25: Preparedness to use services of audit firm that is not a Big-4 – Percentage of companies who replied 'yes' within each turnover bracket - EU

	<€100m	**€100m-€1,000m**	**€1,000m-€10,000m**	**>€10b**
Yes	67%	33%	21%	15%

Source: London Economics survey of companies

Table 26: Preparedness to use services of audit firm that is not a Big-4 – Percentage of companies who replied 'yes' within each turnover bracket – U.S.

	<U.S. $100m	**U.S. $100m - U.S. $250m**	**U.S.$ 250m – U.S.$ 500m**	**U.S.$ 500 m- U.S. $1bn**	**>U.S.1bn**
Yes	67%	90%	100%	33%	67%

Source: London Economics survey of companies

Table 27: Preparedness to use services of audit firm that is not a Big-4 – Percentage of companies who replied 'yes' within each sector - EU

	Business Services	Financial	Manufacturing	Other
Yes	0%	18%	47%	33%

Source: London Economics survey of companies

Table 28: Preparedness to use services of audit firm that is not a Big-4 – Percentage of companies who replied 'yes' within each sector - US

	Financial	Consumer and industrial goods	Hi-tech
Yes	75%	69%	77%

Source: London Economics survey of companies

Audit liability risk and insurance

Finally, audit liability risk and lack of liability insurance are viewed as a less serious barrier to entry by the middle-tier firms than by the Big-4 firms.

This may reflect the fact that, in the absence of entry into the large company market segment, middle-tier firms have not yet had to address fully the issue of ensuring adequate liability insurance coverage for the liability that may arise out of statutory audits of large and very large companies. Indeed, in follow-up discussions with a number of the major middle-tier firms, some of these firms identified lack of insurance availability as a serious issue. When explicitly asked about the liability risk associated with the statutory audit of large companies, the issue of liability insurance was more clearly focused.

Bottom line

The bottom line is that many barriers appear to exist to entry by middle-tier firms into the market segment served by the Big-4 firms, of which the most important are:

- The reputation of the Big-4;
- The capacity and geographical coverage of the middle-tier firms; and,
- Client inertia.

These barriers are unlikely to be overcome in the very near-term as the build-up of reputation, capacity and geographical spread takes time and resources.

That being said, a change in attitude from the larger corporate sector (and the institutional investors[25]) may encourage some middle-tier networks to undertake the necessary investments to overcome the structural barriers.

The reason for client inertia is explored further in the next sub-sections while in Section 10 we review the potential for mergers between middle-tier firms as a mean to overcome the capacity and scale barriers to entry.

[25] In this regard, the recent statement of 14th June by the Association of British Insurers encouraging companies "to consider all contenders when selecting an auditor" is sign that the situation may be changing in the future.

7 What factors determine a company's choice of a provider of auditor services and related services?

To shed further light on audit market segmentation and the barriers faced by middle-tier firms in entering the audit market segment served by the Big-4 firms, the survey also asked respondents to:

- Rate the importance of various factors that would potentially be taken into consideration when a company's auditor is chosen;
- Assess the factors restricting the choice of potential auditor.

We begin the discussion by identifying the most important factors. Next, we review the factors that drive the demand side of the market and, finally, we summarise the views of the supply side of the market.

7.1 Factors that influence a company's choice of auditor

Reputation

In terms of the factors that are taken into account in the choice of a company's auditor, the reputation of the audit firm is viewed by the three groups of respondents as being by far the most important factor (see Table 29 and Table 30). This result is fully consistent with the earlier identification of reputation as a major barrier to entry.

Table 29: Importance of factors in choice of a provider of audit services in a company's home country – average rating from 1 (least important) to 5 (most important)

	Replies from		
Factors	Big-4 auditors	Middle-tier auditors	Companies
Size of the audit firm	3.7	3.1	3.6
Multinational presence of the audit firm	3.6	3.1	3.8
Reputation of the audit firm	4.4	4.2	4.2
Previous experience of the audit firm	3.7	3.6	3.9
Audit firm's knowledge of the company	3.7	3.4	3.6
Audit firm's knowledge of the company's sector(s)	3.8	3.5	3.5
Previous experience of the company with the audit firm	3.7	3.8	3.5
References from others about the audit firm	3.3	3.6	2.6

Source: London Economics survey of audit firms and companies

Other factors influencing the demand for statutory services

For the group of companies as a whole, the second and third most important factors are the multinational presence of the firm and the company's previous experience with the firm.

However, when one breaks down the answers from the companies by company size one observes a number of marked differences (see Table 30).

Companies in the lowest turnover bracket view the previous experience of the audit firm and size of the audit firm as the most important factors.

In contrast the views of companies in the other size groups are broadly similar to those of the group of companies as a whole.

**Table 30: Importance of factors in choice of a provider of audit services in a company's home country company responses broken down by turnover in 2005–
average rating from 1 (least important) to 5 (most important)**

	Breakdown by company turnover			
Factors	**<€100m**	**€100m-€1,000m**	**€1,000m-€10,000m**	**>€10b**
Size of the audit firm	3.8	2.9	4.1	3.7
Multinational presence of the audit firm	3.2	3.9	4.4	3.8
Reputation of the audit firm	3.7	4.3	4.7	4.3
Previous experience of the audit firm	4.0	3.7	3.9	3.8
Audit firm's knowledge of the company	3.8	3.5	3.6	3.5
Audit firm's knowledge of the company's sector(s)	3.6	3.4	3.4	3.7
Previous experience of the company with the audit firm	3.3	3.9	3.6	3.3
References from others about the audit firm	2.6	2.4	2.4	2.8

Source: London Economics survey of companies

Reputation of the audit firm is also viewed as a very important, if not the most important, factor across the various economic activity sectors, especially in the case of financial services (see Table 31).

The precise ranking of the other factors varies across sectors but in all but one case, they are judged to be important. The only exception relates to "references from others about the audit firms" which is rated as being only of average or slightly-above-average importance.

**Table 31: Importance of factors in choice of a provider of audit services in a company's home country, company responses broken down by sector –
average rating from 1 (least important) to 5 (most important)**

	Sectors			
Factors	**Business services**	**Financial services**	**Manufact.**	**Other**
Size of the audit firm	3.9	3.5	3.5	3.4
Multinational presence of the audit firm	4.5	3.5	4.1	3.8
Reputation of the audit firm	4.4	4.9	4.1	4.2
Previous experience of the audit firm	4.1	4.0	3.7	3.6
Audit firm's knowledge of the company	3.5	3.5	3.5	3.8
Audit firm's knowledge of the company's sector(s)	3.3	3.6	3.2	3.9
Previous experience of the company with the audit firm	3.6	3.3	3.7	3.6
References from others about the audit firm	2.1	2.8	2.5	2.5

Source: London Economics survey of companies

The perspectives from the supply side

In contrast, the responses from the Big-4 firms suggest that the specialised industry knowledge of the firm is the second most important factor while a series of factors (size of the audit firm, previous experience of the audit firm in general, knowledge of the company by the audit firm, previous experience of the company with the firm) are rated as the third most important factors.

Middle-tier firms believe that previous experience by the company with the audit firm and references from others about the audit firm are the second and third most important factors.

Bottom line

Overall, these survey results suggest that, besides the consensus view on the importance of reputation, there may be a misalignment between the perceptions of firms and companies' views as to what the most important factors are in the choice of a company's auditor.

This suggests that middle-tier firms may face a significant hurdle in entering the audit market segment served by the Big-4 firms.

7.2 Factors that restrict a company's choice of auditor

Costs and other factors

Looking at the factors that restrict a company's choice of desired auditor, all three groups viewed the costs of the audit services as the main or almost main factor (see Table 32).

In terms of the assessment of the overall severity of this factor, however, this is generally viewed as much less of an issue than some of the factors and barriers discussed earlier.

Interestingly, companies judge the number of audit firms capable of meeting the company's needs as an even slightly more important factor.

Local rules governing auditor independence are judged to be a factor slightly more severe than average, while the degree of severity of the lack of adequate audit liability insurance is rated as slightly below average.

Table 32: Importance of various factors restricting the choice for the desired auditor– average rating from 1 (least important) to 5 (most important)

	Replies from		
Factors	Big-4 auditors	Middle-tier auditors	Companies
Number of audit service providers capable of meeting the company's needs is too small	2.3	2.7	3.1
There is not enough competition in the audit market	1.7	2.3	2.9
The costs of the audit services	2.9	3.0	3.0
Lack of adequate audit liability insurance	2.0	2.0	2.2
Local rules governing auditor independence	3.1	2.8	2.8

Source: London Economics survey of audit firms and companies

More detailed perspective from the demand side

The breakdown of company responses by turnover shows that companies in the lowest and highest turnover brackets consider the cost of audit services as the most important factor, while companies in the two middle turnover brackets rank the number of audit firms capable of meeting the company's needs as the most important (see Table 33).

A more detailed analysis of the company responses by sector of economic activity shows that a number of other factors are also at play. But, interestingly, the four groups rate the lack of adequate audit liability insurance as being of average or slightly below average importance.

Table 33: Importance of various factors restricting the choice for the desired auditor, company responses broken down by turnover in 2005 – average rating from 1 (least important) to 5 (most important)

	Breakdown by company turnover			
Factors	**<€100m**	**<€100m**	**<€100m**	**<€100m**
Number of audit service providers capable of meeting the firm's needs is too small	2.5	3.2	3.8	2.4
There is not enough competition in the audit market	2.3	3.0	3.8	2.1
The costs of the audit services	3.0	3.1	3.0	2.8
Lack of adequate audit liability insurance	2.3	2.2	2.5	1.9
Local rules governing auditor independence	2.8	2.6	3.5	2.4

Source: London Economics survey of companies

Table 34: Importance of various factors restricting the choice for the desired auditor, company responses broken down by sector – average rating from 1 (least important) to 5 (most important)

	Sector			
Factors	**Business services**	**Financial services**	**Manufact.**	**Other**
Number of audit service providers capable of meeting the firm's needs is too small	4.1	2.9	2.8	2.7
There is not enough competition in the audit market	3.6	2.6	2.6	3.1
The costs of the audit services	4.0	2.9	2.8	2.4
Lack of adequate audit liability insurance	2.4	2.2	2.2	2.3
Local rules governing auditor independence	2.6	3.2	2.9	2.6

Source: London Economics survey of companies

8 Influence of various stakeholders on a company's choice of auditor

Following the discussion of barriers to entry and the factors that influence a company's choice of auditor, we now turn to the issue of who, within a company, exerts the greatest influence on the choice of the auditor for the statutory audit of the company's accounts.

Of interest here is not the person or corporate body who is legally responsible for appointing the auditor but the person or corporate body who de facto exerts the greatest influence on the choice of auditor. Because in the case of group companies the parent company may exert the strongest influence, separate information was collected with regards to the appointment of auditors at subsidiaries.

In total, the survey asked companies to:

- Rate the importance of various management and corporate governance bodies on the choice of auditor for the parent company (e.g. the management, the CEO, etc);
- Rate the importance of various stakeholders on the choice of auditor for the parent company (e.g. shareholders, creditors, etc);
- Rate the importance of various bodies on the choice of auditor for subsidiary companies (if applicable).

The survey results are presented in Table 35, Table 36 and Table 37.

Influence of management and corporate bodies

The top two sources of influence are the company's Finance Director and the Board's Audit Committee.

The company's Chairman, CEO and Chairman of the Board's audit committee are viewed as having relatively little de facto influence over the selection of the auditor for the statutory audit.

Table 35: Management and corporate bodies with the strongest influence on choice of audit firm for parent company	
Stakeholder	**Share of respondents**
The company's management	11%
The company's CEO	3%
The company's Chairman	0
The company's Finance Director	34%
The company's Board	13%
The Board's audit committee	34%
The chairman of the Board's audit committee	3%

Source: London Economics survey of companies

Influence of stakeholders

The vast majority of companies indicated that neither shareholders nor creditors have any significant influence on the appointment of the auditor.

A large number of companies find that creditors have no influence in the decision process, while about 30% of the respondents found that shareholders have a strong influence. The majority of this 30% also said that there is one shareholder or a group of shareholders with a strong interest in the company. Among the other groups with strong influence, a few respondents suggested the company's management, while a few others mentioned the internal audit director, the audit committee and the unions.

That being said, shareholders, in particular institutional investors, may have an indirect influence in the sense that they may be perceived by large companies in some countries to have preference for Big-4 audit firms.

Table 36: Influence of stakeholder groups on selection of audit firm for parent company			
Stakeholder	**No influence**	**Minor influence**	**Strong influence**
Shareholders	26%	43%	30%
Creditors	80%	18%	2%

Source: London Economics survey of companies

Influence on choice of auditors for subsidiaries

79% of respondents indicated that a single group auditor undertakes the statutory audits of the parent company and all its subsidiaries. The majority of respondents also stated that the parent company has the strongest influence on the choice of auditor of the subsidiaries, both in the home country and abroad.

Table 37: Management and corporate bodies with the strongest influence on choice of audit firm for subsidiary companies

Stakeholder	Subsidiaries located in home country of company	Subsidiaries located abroad
The parent company	82%	76%
The subsidiary's management	4%	16%
The subsidiary's CEO		
The subsidiary's chairman		
The subsidiary's Finance Director	7%	4%
The subsidiary's Board		
The audit committee of the subsidiary's Board	7%	4%

Source: London Economics survey of audit firms and companies

9 What factors influence a company's decision to change its auditor?

In this section we review the reasons which lead a company to change auditor.

But, first it is useful to note that, while 67% of companies, having responded to the company survey ran a formal auditor procurement process in the last 10 years, only a limited number of companies did actually change auditors. In many cases, the current auditor had been in place a long time. For example, more than half of the companies indicated that the auditor had served the company for more than 7 years (see Table 22).

Actual change of auditor

Of those European companies which have changed auditors over the last ten years, 12% reported to have had to do so because of the demise of Arthur Andersen.

Moreover, 85% of companies, which have changed auditors over the last ten years, reported to have changed from a Big-4/Big-5 firm to another Big-4 firm.

A further 13% reported having moved from a middle-tier firm to a Big-4 firm while 2% reported having moved from a Big-4/Big-5 firm to a middle-tier firm.

The switching pattern of U.S companies is less focused on the Big-4 firms. Among the 36% companies that reported having switched auditors, 42% moved from a Big-4 firm to another Big-4 firm and 42% moved from a Big-4 firm to a middle-tier firm while 17% moved from a middle-tier firm to a Big-4 firm. However, none of the larger U.S companies moved to a middle-tier firm.

Only very few companies indicated having encountered a refusal from a preferred audit firm, in all cases because of conflicts of interest.

Reasons for changing auditor – views from the companies

The most frequent reasons having led companies to change auditor is the appointment of a group auditor.[26]

In contrast, dissatisfaction with the quality of the audit work and the price of the audit services were not major reasons for changing auditor among the companies having actually changed auditor over the last ten years.

[26] A number of companies also indicated that the company's policy of regularly rotating the auditor was a key reason for changing auditors. But, this reflects the special case of Italy where there is statutory requirement to rotate auditor firms.

In contrast, among the U.S companies, lack of satisfaction with the quality of the audit work of the incumbent audit firm was noted by 67% of those having switched auditors as the reason for the switch. The level of the audit fees of the incumbent was the only other factor which was judged as having been an important driver.

Of note is the fact that none of the EU companies reported having to change auditor because of conflict of interest concerns with the auditor caused for example by the independence rules. This reflects probably the fact the independence rules are still relatively new and, so far, few companies have changed auditor as a result of these rules. But, this may change in the future.

Table 38: Reasons for changing auditor – companies' views

Reason	Frequency (in % of responses)
Regulatory requirement such a statutory rotation, etc	4%
Resignation or failure to seek re-appointment by audit firm	
Appointment of a group auditor	16%
Company merger or take-over	4%
Conflict of interest of audit firm	
Non-satisfaction with quality of audit work of incumbent audit firm	4%
Differences in opinion regarding financial statements and the company's reporting strategy	4%
Insufficient advisory suggestions from incumbent audit firms	4%
Audit fees of incumbent audit firm are too high relative to audit fee rates of competitors	8%
Advisory fees of incumbent audit firm are too high relative to fees of competitors	4%
Company policy of regular rotation of audit firm	24%
New company policy to procure separately audit and advisory services	
Changing needs of company as a result of greater international presence	
Changing needs of company as a result of a change in or a development of new activities	
Logistical issues (nearness of audit office, etc)	4%
Views of the investors	
Other/ non-specified	24%

Source: London Economics survey of companies

Reasons for changing auditor – views from the audit firms

According to the Big-4 firms, the main reason leading companies to change auditor is a factor that is under the direct control of the audit firms, namely lack of satisfaction by the client with the quality of audit work by the incumbent firm. This assessment of the audit firms is based on their own extensive internal reviews and client feedback following the loss of a mandate.

The next three factors, however, are outside the control of the audit firms. They comprise the appointment of a group auditor, a company merger or take-over and changing needs of the company.

The last factor of above average importance for the Big-4 firms is the level of the audit fees.

Middle-tier firms include slightly more factors under the control of audit firms as the top reasons why companies change auditor. Indeed, lack of satisfaction with the quality of the audit work, the level of the audit fees of the incumbent, the lack of advisory suggestions from the incumbent and the level of advisory fees of the incumbent are all judged to be the most important factors.

Next come a series of external factors such as the appointment of a group auditor, a company merger or take-over and changing needs. These factors are all rated as also being of above-average importance.

Table 39: Importance of various factors having led clients to switch audit firm – average rating on a scale of 1 (least important) to 5 (most important)

	Replies from	
Factors	Big-4 firms	Middle-tier firms
Regulatory requirement such statutory rotation, etc	1.6	2.1
Resignation or failure to seek re-appointment by audit firm	1.5	2.0
Appointment of a group auditor	3.3	2.9
Company merger or take-over	3.3	2.8
Conflicts of interest of audit firm	1.6	2.2
No satisfaction with the quality of the audit work of the incumbent audit firm	3.4	3.1
Different opinions regarding the financial statements and the company's reporting strategy	1.6	1.9
Not enough "advisory suggestions" from the incumbent	2.3	3.1
Audit fees of the incumbent too high	2.9	3.4
Advisory fees of the incumbent too high	1.4	2.8
Firm policy of regular rotation of audit firm	1.8	1.9
New policy to procure separately audit and advisory services	1.9	2.4
Changing needs of the company such as for example a greater international presence	3.1	2.8
Changing needs of the company as a result of a change in or development of new activities	2.7	2.3
Logistical issues (nearness of the audit office, etc)	1.3	1.8
Views of the investors	2.1	2.1

Source: London Economics survey of audit firms

10 Mergers and acquisitions among small and medium-sized audit firms

10.1 Context

The question with which policy-makers have been wrangling for some time is whether some middle-tier firms could combine, either through mergers or acquisitions (M&A), to acquire the larger scale and geographical coverage that appears necessary to meet the needs of the audit market segment currently served by the Big-4 firms.

To shed some light on the prospects for such M&A activity within middle-tier firms, the respondents to the audit firm and company surveys were asked to assess the prospects for such mergers in each EU Member State.

However, before proceeding to a review of the survey responses, it is important to note that the difference in size between the larger middle-tier firms and smallest of the Big-4 firms is so substantial that even a new firm resulting from the merger of the next three largest middle-tier firms would be much smaller than the smallest of the Big-4 firms in many EU Member States.

10.2 The difference in size between firms and firm networks

Overleaf, in Table 40 and in Figure 3 we provide an illustration of this situation for a number of EU Member States. In the figure, we show, for the Member States for which we have the relevant data, the cumulative 2003-04 audit fee income of the largest, first two largest, first three largest, etc. middle-tier firms and the audit fee income of the smallest of the Big-4 firms. The intersection point between the two lines shows the number of middle-tier firms that would need to merge to achieve the size of the smallest Big-4 firm.

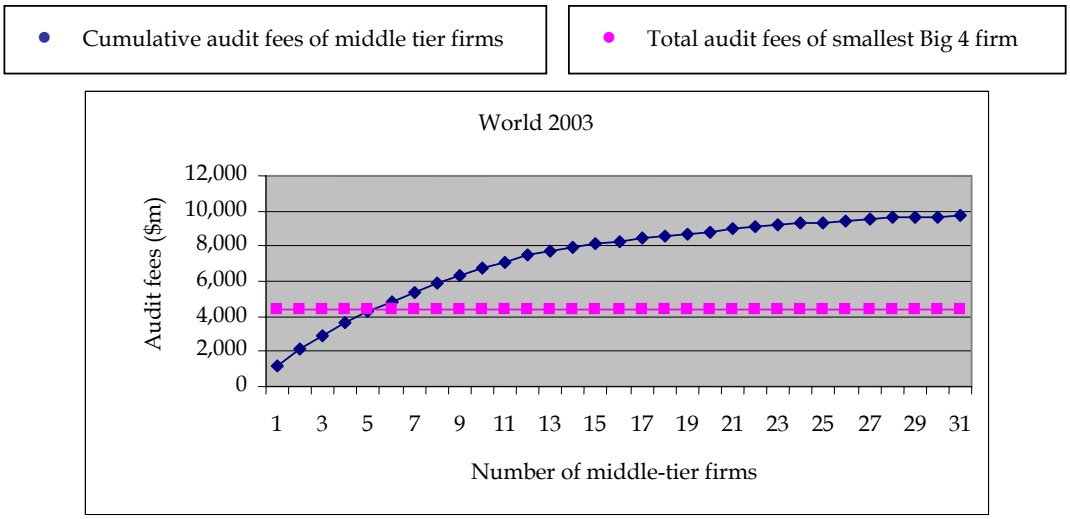
In many countries, 3 or more of the largest middle-tier firms would have to merge to be similar in size to the smallest of the Big-4 firms in that country.

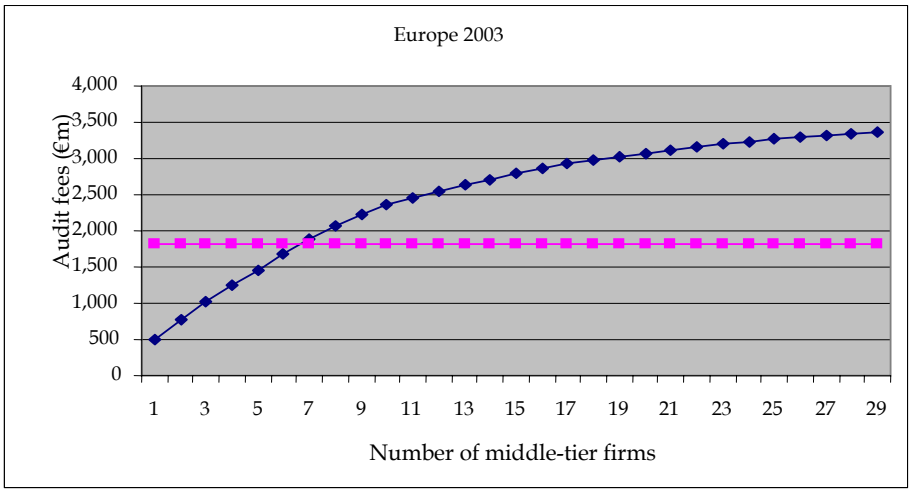
Obviously, to the extent that size gives a certain advantage to the Big-4 firms, the size gap documented below raises some doubts about the plausibility of mergers and acquisitions between middle-tier firms as a mean for increasing choice of service provider in the audit market for large companies.

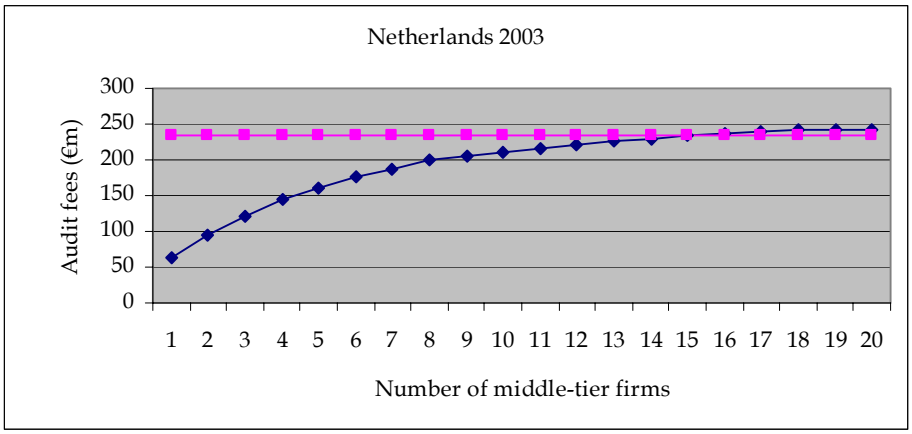
Table 40: Summary Table		
Country	**Size of 5th largest audit firm as % of 4th largest[1]**	**Number of firms**
World	26.7	6
Europe	27.1	7
Netherlands	26.5	15
Italy	20.7	12+
France	60.3[2]	4[2]
Germany	73.2	2
Spain	30.1	4
Ireland	53.8	4
Hungary	8.3	12+
Sweden	34.4	6
UK	36.7	4

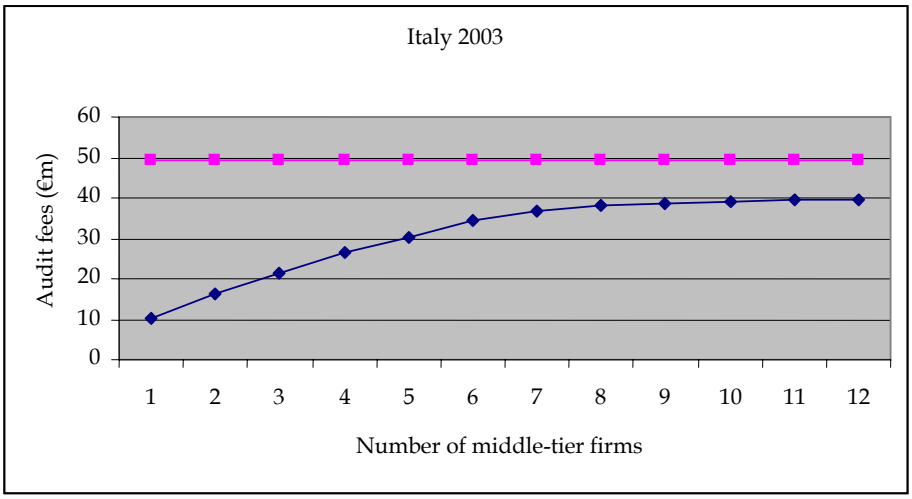
Note: (1) audit firm size is measured on the basis of audit fee income. (2) Following the announced merger of Deloitte and BDO, these figures will be 49% and 4.
Source: London Economics calculations based on data from International Accounting Bulletin (various issues) for all areas/countries except the UK and the FRC (2006) for the UK

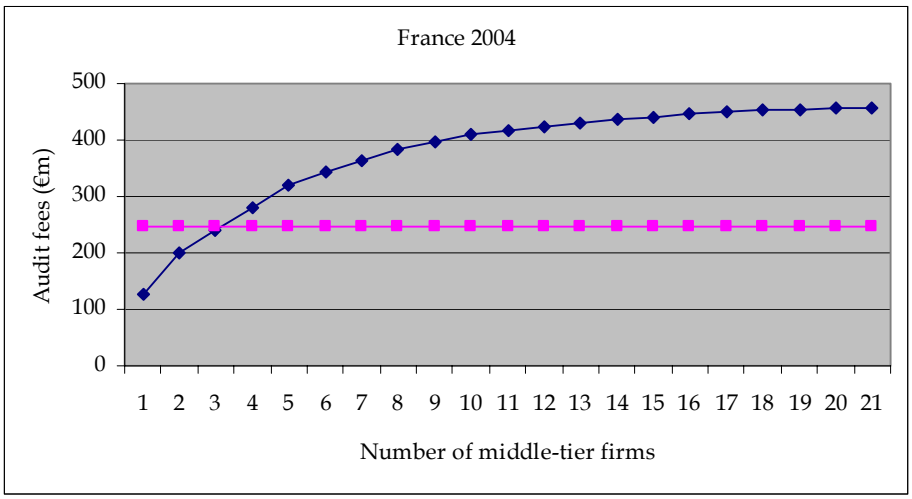
Figure 3: Cumulative audit fee income of largest middle-tier firms

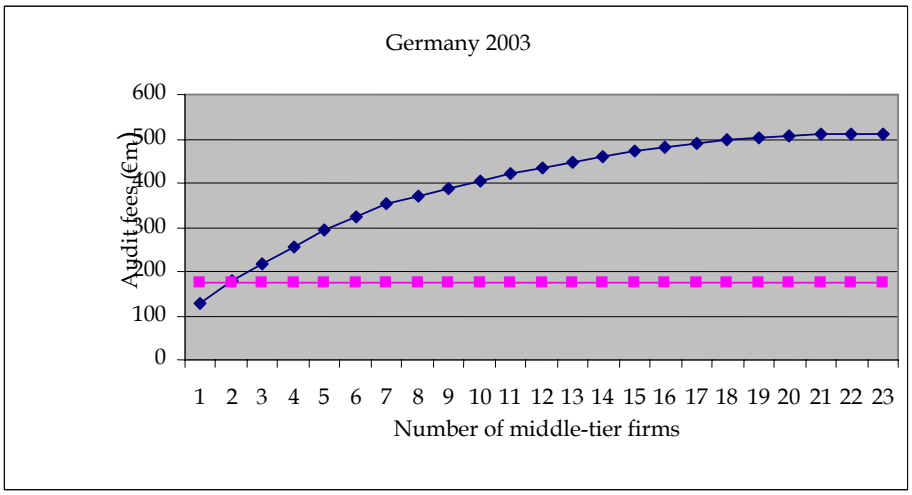


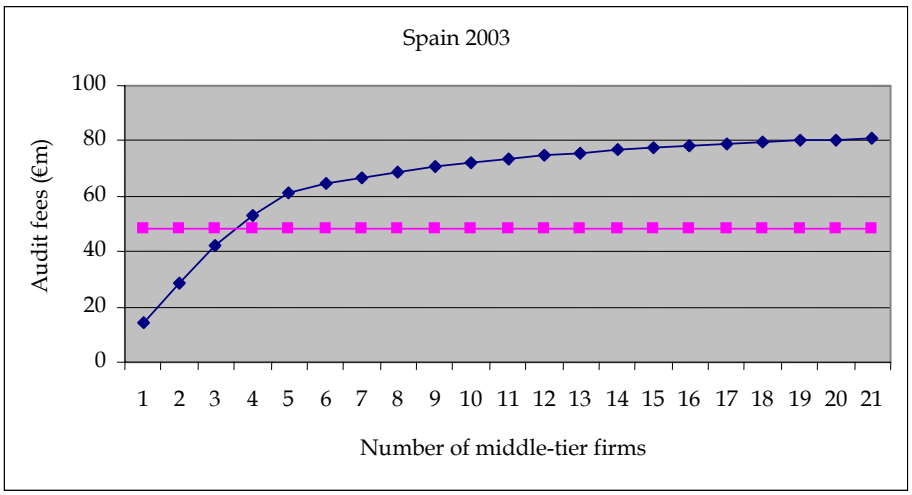

Europe 2003
Audit fees (€m)
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
Number of middle-tier firms

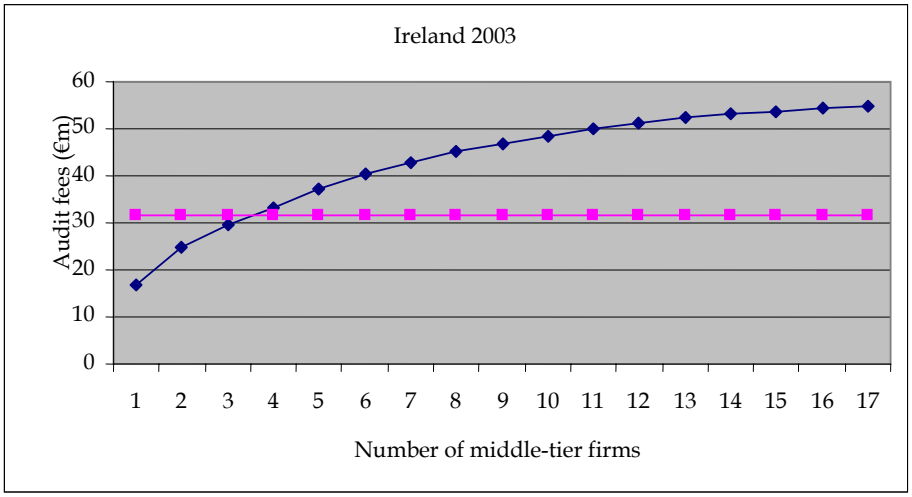

Netherlands 2003
Audit fees (€m)
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Number of middle-tier firms

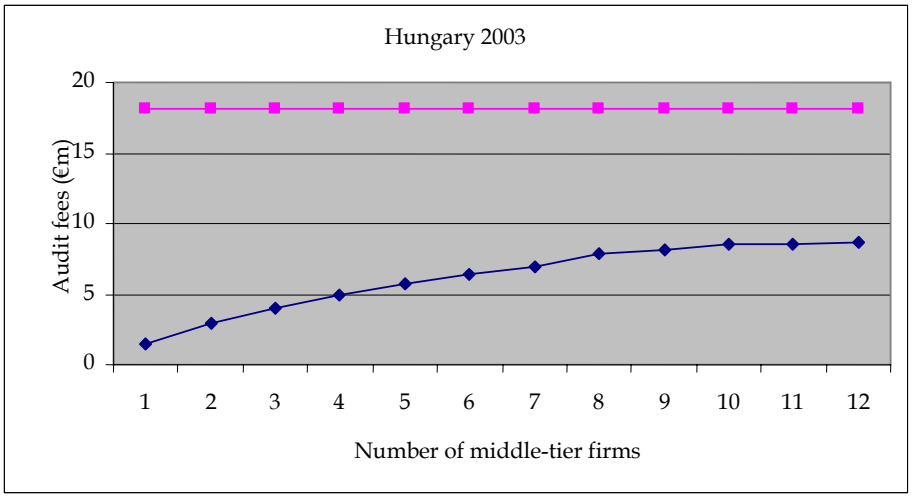

Italy 2003
Audit fees (€m)
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12
Number of middle-tier firms

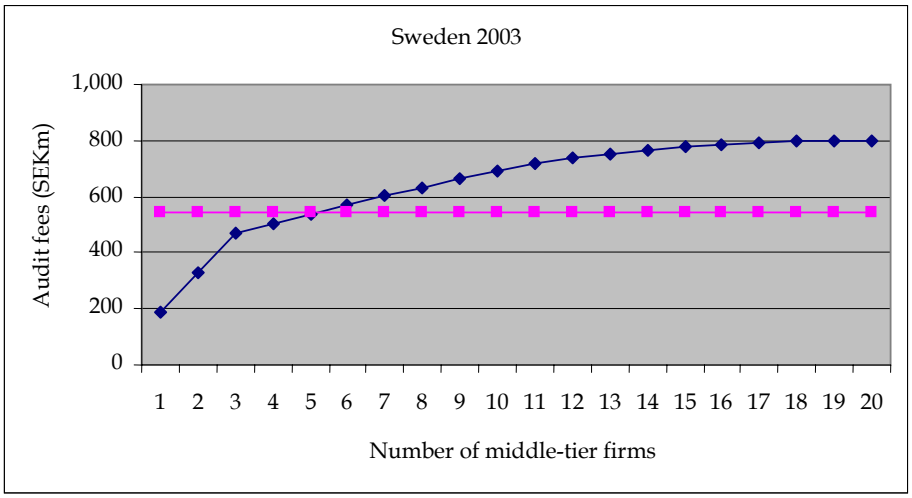

France 2004
Audit fees (€m)
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
Number of middle-tier firms

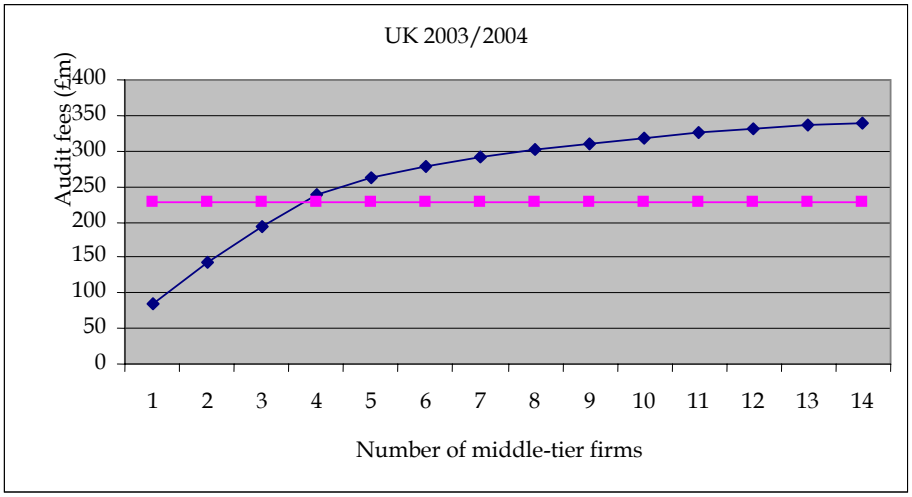

Germany 2003
Audit fees (€m)
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Number of middle-tier firms


Spain 2003
Audit fees (€m)
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
Number of middle-tier firms


Ireland 2003
Audit fees (€m)
0
10
20
30
40
50
60
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Number of middle-tier firms


Hungary 2003
Audit fees (€m)
0
5
10
15
20
1 2 3 4 5 6 7 8 9 10 11 12
Number of middle-tier firms


Sweden 2003
Audit fees (SEKm)
0
200
400
600
800
1,000
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Number of middle-tier firms



10.3Likelihood of such mergers and acquisitions

It is clear that the size gap between the Big-4 firms and the middle-tier firms is substantial and will not be easily closed. Nevertheless, mergers among middle-tier firms could help address to some extent some of the barriers to entry identified earlier and increase the attractiveness of the offer to companies, although not necessarily the very large ones.

To gauge the prospects of such mergers, we asked audit firms and companies to provide their views on the prospects for such mergers. While we report below the views of the Big-4 firms, middle-tier firms and companies, those of the middle-tier firms are the most informative as they reflect the views of those who would be most directly involved in such M & A activity.

In general, some M&A activity is to be expected over the next three years.

The views of audit firms - strong merger prospects

Indeed, middle-tier firms judge such prospects to be well above average[27] in Austria, Denmark, Malta and Poland.

In contrast the respondents from the Big-4 see good M&A prospects in only one country, namely Belgium.

[27] An average rating greater of 2.5 is judged to be represent a likelihood well above average while a rating of 1.5 or less is considered to represent a low likelihood.

The views of audit firms - weak merger prospects

Middle-tier firms rate M&A prospects as low in only 5 Member States, namely Latvia, Luxembourg, the Netherlands, Portugal and Sweden.

The Big-4 list of countries with a low likelihood of future M&A among middle-tier firms is different as it includes the Czech Republic, France, Greece, Hungary, Ireland, Lithuania, Luxembourg, Malta, Slovakia and Spain.

Overall, the audit firm survey results suggest that some limited consolidation of middle-tier firms may occur in a number of countries over the coming years. However, the survey results raise doubts about the plausibility of mergers and acquisitions among middle-tier firms as a mean for increasing choice of service provider in the market for statutory audit services. That being said, collaborative arrangements between middle-tier firm networks may be a mean for expanding the reach and scope of these networks.

Table 41: Assessment of the likelihood of M&A among small and medium-sized audit firms over the next three years –
1 = low likelihood, 2 = average likelihood and 3 = high likelihood

Member State	Big-4 firms	Middle-tier firms
Austria	2	3
Belgium	2.7	2.2
Cyprus	1.8	2
Czech Republic	1.5	2
Denmark	1.7	2.6
Estonia	1.7	1.7
Finland	2	2
France	1.3	2
Germany	2	2.3
Greece	1.3	2.4
Hungary	1	2.3
Ireland	1.5	
Italy	2	2
Latvia	1.7	1.5
Lithuania	1.4	2
Luxembourg	1	1.5
Malta	1	2.5
Netherlands	2	1
Poland	3	3
Portugal	2	1
Slovakia	1.3	2
Slovenia	1.7	2

Table 41: Assessment of the likelihood of M&A among small and medium-sized audit firms over the next three years – 1 = low likelihood, 2 = average likelihood and 3 = high likelihood		
Member State	**Big-4 firms**	**Middle-tier firms**
Spain	1	2
Sweden	2.3	1.3
UK	2	2
EU	1.7	2.0

Source: London Economics survey of audit firms and companies

10.4 Obstacles to such mergers and acquisitions

A number of obstacles are said to stand in the way of consolidation in the middle-tier firm segment. Below we provide a synthesis of the views expressed by middle-tier, focusing on potential non-regulatory and regulatory obstacles, legal obstacles and structural obstacles.

Views of middle-tier firms regarding M&A within a given Member State

- *Non-regulatory obstacles*

The most commonly cited obstacle to mergers among middle-tier firms is the unwillingness of partners to lose their independence and business influence as a result of the merger. A large number of respondents also mentioned differences in culture, background and operating structure as important blocking factors.

- *Regulatory obstacles*

Most respondents indicated that, in general, there are no regulatory obstacles of any significance to mergers.

- *Legal obstacles*

Again, most respondents noted that there are no significant legal obstacles to mergers.

- *Structural obstacles*

Although a number of firms indicated that there exist structural obstacles to mergers among middle-tier firms, few provided details of such impediments.

A few firms stated that structural obstacles are due to internal pre and post merger disagreements. A few others listed obstacles caused by different legal forms; different regulations regarding pension plans, real estate and a lack of common vision and strategy, respectively. Lack of capacity of audit partners to lead several locations/entities and lack of will by the partners to overcome personal costs of mergers for the benefit of future advantages were also cited.

Views of middle-tier firms regarding cross-border M&A

- *Non-regulatory obstacles*

Many respondents mentioned language barriers, differences in culture and operating structure, and lack of knowledge of the local audit market as an obstacle to mergers within the EU.

Difficulties in finding suitable foreign partners were also viewed as a major stumbling block.

- *Regulatory obstacles*

A few respondents cited the issue of independence. Others indicated that, even if the reporting requirements as well as the auditing standards are almost the same in Europe, strong differences exist between professional regulations, professional qualifications, and the access conditions to the profession.

A few respondents also cited the fact that foreign audit firms cannot perform audits in Germany, Finland and Greece. This issue is likely to be resolved following the implementation of the recently adopted Directive on Statutory Audit.

- *Legal obstacles*

Many respondents mentioned the fact that statutory auditors must be registered auditors in the country in which they operate.[28] Other respondents indicated that differences in legislation (related to ownership and liability in particular) are obstacles.

- *Structural obstacles*

No clear picture emerges from the responses regarding structural obstacles to cross-border M&A of middle-tier firms. Factors cited as obstacles include differences in pricing, disagreements within audit firms, different legal structures and profit sharing schemes of the audit firms, the capacity of partners and different work and training systems.

[28] This may reflect an imperfect understanding of the current legal framework.

Bottom line

A number of obstacles to consolidation among the segment of middle-tier firms are said to exist, but many are under the control of middle-tier firms as they relate to their partners' willingness to give up some independence and business influence and to adapt and change the organization of their activities. There are no substantial regulatory and legal obstacles to such consolidation.

11 Summary and key conclusions of Part I

Our analysis of concentration of the statutory audit market in the EU25 focuses on three market segments, namely the domestic companies included in the main index of the stock exchange, all domestic companies listed on the regulated market of the stock exchange and all companies for which information on the auditor is available in the Amadeus databank.

The market shares of the four largest audit firms (C4) and the Herfindahl-Hirschman Index (HHI) are the two concentration indicators used predominantly in the study to assess the degree of concentration in the statutory audit market.

As, in many Member States, information on audit fees is not available, we use both the number of audit mandates and the size of the companies being audited as proxies for audit fees. Concentration estimates based on the size of companies give implicitly a greater weight to larger companies. Thus, any divergence between the concentration figures based on the two types of metrics will reflect the greater role played by middle-tier firms in providing audit services to medium-sized and smaller listed companies.

In 2004, in all but two Member States, the C4 figure for the market including only the companies of the main stock exchange index ranges from 83 to 100 and in fourteen of these countries, the C4 figure ranges from 90 to 100.

Because in France and, until recently, Denmark, companies were generally required to appoint two auditors, the presence of the middle-tier firms is more substantial in this market segment and the C4 measure stands at only 73 in France and 78 in Denmark.

In all cases, except Denmark and France, the computed HHIs exceed, often by a significant margin, the threshold typically giving rise to concerns about concentration in the marketplace.

The market for statutory audit services to all listed companies on the regulated markets is somewhat less concentrated when one focuses on the number of mandates. In a number of cases such as Belgium, the Czech Republic, Denmark, Germany, Greece, France, Latvia, Hungary and Poland, the C4 measure is below 70. The HHI is also below the "concentration concern" threshold in these countries and Ireland, Lithuania and Luxembourg.

However, when concentration is measured on the basis of the size of companies, concentration remains high and, in 2004, in all but three countries, the HHI was above the "concentration concern" threshold level.

A similar difference between concentration figures based on the number of audit mandates and the concentration figures based on the size of companies is observed when the market is extended to include all public companies.

The bottom line is that the market segment of the provision of audit services to large companies is highly concentrated and dominated by the Big-4 firms throughout the EU25.

The concentration of the market for statutory audit services was already high a number of years ago, but a number of mergers among the major audit firm networks over the last 20 years has contributed to significantly increase the level of concentration.

The degree of concentration is particularly pronounced in the case of statutory audits of financial institutions, a market segment in which the Big-4 firms hold in a number of EU Member States 100% of the audit mandates of financial institutions listed on the regulated stock exchanges. In contrast, they hold about only 67% of the audit mandates of all non-financial companies listed on the regulated markets of the stock exchanges.

A number of factors have contributed to the consolidation among the larger networks. Obviously, the mergers of some of the larger networks and the demise of Arthur Andersen were a significant factor.

But, underlying the drive towards consolidation among the larger networks were globalisation and the growing geographical spreads of clients, technological innovations in the auditing profession in combination with lack of access to external capital and the need to develop deeper industry and technical expertise.

To shed light on why the concentrated statutory audit industry structure persists, audit firms and companies were asked to provide their views on the dimensions on which audit firms compete and factors having contributed to the current state of concentration.

While a number of aspects affect the competitiveness of their audit offerings, Big-4 firms essentially compete on price as their broader characteristics and attributes are very similar. In contrast, the middle-tier firms view reputation as the key competition driver in the market for statutory audit services to larger, listed companies. Next come price, quality in terms of reliability and capacity.

Interestingly, both the Big-4 firms and the middle-tier firms rate the geographical spread of the network and the size of the network as less important competition drivers than the factors discussed above.

While a number of factors are said to have contributed to the current state of concentration, changing client needs is viewed by all, audit firms and companies, as the single most important factor. Other important factors are the disappearance of one of the major audit networks and the need to achieve economies of scale.

Middle-tier firms face a number of barriers to entry into the statutory audit market served typically by the Big-4 firms. Foremost among these barriers is reputation. The selection of a Big-4 firm is often viewed as "safer" because of the reputation of the Big-4 firms and easier to defend should a problem arise

down the road. Additional barriers which are more directly under the control of the middle-tier firms are their smaller capacity and geographical spread.

Client inertia and limited switching are also cited a significant barrier to entry.

These barriers are unlikely to be overcome in the very near-term as the build-up of reputation, capacity and geographical spread takes time and resources. That being said, a change in attitude from the larger corporate sector (and the institutional investors) may encourage some middle-tier networks to undertake the necessary investments to overcome the structural barriers.

The survey results also show that many of the larger companies are reluctant to consider using the services of a non-Big-4 audit firm. For example, at one end of the spectrum, about two-thirds of smaller companies with an annual turnover of less than €100 million indicated that they would be prepared to use the services of a non-Big-4 firm. In contrast, at the other end of the spectrum, only 15% of the larger companies with a turnover in excess of €10 billion reported that they would be prepared to do so.

In terms of sector, the aversion to using the audit services of a non-Big-4 firm was particularly pronounced in the case of business services companies and financial institutions.

The survey results regarding the importance of various factors taken into account by companies in selecting an auditor confirm the views expressed with regards to competition in the market place and barriers to entry. Reputation is judged by all types of respondents as the major factor. Other important factors, from the companies' perspective, are the geographical spread of the network and a company's previous experience with the firm.

In the terms of the factors which restrict the choice of auditors, costs of audit services, the number of audit service providers capable of meeting the company's needs and local rules governing auditor independence were viewed as the most important by the three groups of respondents. Companies also noted a lack of competition and choice in the statutory audit market as a restrictive factor.

In terms of who exerts the strongest influence on the choice of auditor, as distinct from the body that legally appoints them, the Board's audit committee and the company's Finance Director were cited most frequently while in the case of groups, the parent company exerted the strongest influence on the appointment(s) of auditor(s) at domestic and foreign subsidiaries.

Shareholders and creditors are generally viewed as having no or only a minor influence on the selection of auditor.

In practice, companies do not frequently change their auditor. Indeed, more than half of the companies responding to the survey indicated that their auditor had served the company for more than 7 years.

Of those companies which had changed their auditor, only 12% did so in response to the demise of Arthur Andersen and 85% simply switched from one Big-4 firm to another Big-4 firm, 13% switched from a middle-tier firm to a Big-4 firm and 2% switched from a Big-4 firm to a middle-tier firm.

The most frequent reason having led companies to change auditor is the appointment of a group auditor.

In contrast, dissatisfaction with the quality of the audit work and the price of the audit services were not a major reason for changing auditor among the companies having actually changed auditor over the last ten years.

The size gap between the Big-4 firms and the middle-tier firms is substantial and will not be easily closed and in many EU25 Member States, 3 or more of the largest middle-tier firms would have to merge to be similar in size to the smallest of the Big-4 firms in that country.

Thus, mergers and acquisitions within the middle-tier firm segment are unlikely to result in the near future in a new network that could become a major challenger to the Big-4 networks. This raises some doubts about the plausibility of mergers and acquisitions between middle-tier firms as a means for increasing choice of service provider in the audit market for large companies.

Nevertheless, mergers among middle-tier firms could help address to some extent some of the barriers to entry identified earlier and increase the attractiveness of the offer to companies, although not necessarily the very large ones.

Overall, the audit firm survey results suggest that some limited consolidation of middle-tier firms may occur in a few countries over the coming years, in particular in Austria, Denmark, France, Luxembourg and the Netherlands.

The key obstacles to a consolidation of the industry within the middle-tier segment are under the control of middle-tier firms as they relate to their partners' willingness to give up some independence and business influence and to adapt and change the organization of their activities. No or few substantial regulatory and legal obstacles are said to exist.

Overall, the key conclusions which emerge from this first part are that:

- While the market for statutory audits is highly concentrated in the market of statutory audits of large companies, the middle-tier networks are not viewed in many cases at the present time as a real alternative to the Big-4 firms, both because of reputational reasons and perceived lack of breadth and depth in comparison to the Big-4 firms.
- Middle-tier firms may make some inroads into the market dominated by the Big-4 but any gains are likely to be limited.
- Moreover, because of significant differences in size between the Big-4 firms and the middle-tier firms, in many countries a merger between 3 or more middle-tier firms would have to occur to achieve a size

similar to that of the smallest Big-4 firm. In some countries the prospects for some consolidation among middle-tier firms are said to be good but the consolidation is unlikely to be of the magnitude necessary to achieve the size of the Big-4 firms.

Part II: The Insurance Market for Statutory Audit

12 Introduction

This second part of the report addresses the issues of the risks faced by audit firms and the protection through insurance against such risks.

- Section 13 discusses the statutory risk faced by audit firms;
- Section 14 addresses issues related to audit risk and liability insurance;
- Section 15 reviews the availability of insurance for audit firm liability;
- Section 16 assesses the threshold at which a mega-claim could wipe out a major audit network;
- Section 17 examines the impact of potential external quality oversight bodies on audit quality and liability risks;
- Section 18 focuses on alternative risk protection solutions.

13 Statutory audit risks faced by audit firms

13.1 Background

All the activities, audit as well as non-audit services, undertaken by audit firms give rise to a risk that, at some point in time following the completion of a certain activity, a party may lodge a claim against the audit firm having provided the service.

As the focus of the present report is on statutory audits of listed companies, this chapter addresses exclusively risks arising from the provision of statutory audit services.

An auditor's fault or negligence in the context of a statutory audit can have damaging consequences which go beyond the audited company. Individual shareholders, creditors and prospective purchasers of the audited company may suffer damages for which, depending on different Member States' liability regimes and case law, auditors may be held liable.

In the majority of Member States, the liability of the auditor towards the audited company is based on the contract existing between them. In contrast, the general trend regarding third party damages is to ground the liability action in tort.

In a majority of Member States, the statutory audit is considered to be not only in the interest of the company, but also in the interest of the public, with a duty of care owed to both the company and third parties. As a result, any third party could seek to recover damages from the statutory auditor upon proving the elements of the liability claim; usually fault (intentional conduct or negligence in any degree), recoverable damages and causal link. This causal link between the damage and the fault can be difficult to establish for the third parties (for further details see the Thieffry study).

In a minority of Member States, actions by third parties are restricted: the third party must prove that the statutory auditor owes her/him a duty of care: i.e. the auditor knew or ought reasonably to have known that his work or report would be relied on by the claimant for a particular purpose. The same rules on causation and recoverability of damages would also apply.

Clearly, audit firms face also the risk of claims being filed against them in the case of deliberate fraudulent behaviour by some of their staff.

However, in this report, we focus only on the issues arising from "negligence" claims against auditors, i.e. claims which do not allege any fraudulent behaviour by auditors. That is not to say that fraud may not be at the source of a claim. But, such a claim would involve fraud at the corporate level which remained undetected by the auditors, and it is the lack of detection by the auditor which would be the source of the claim and not fraudulent activities by the auditor him/herself.

13.2 Potential sources of claims

In order to properly assess the risk of claims against European audit firms, it is useful to distinguish the different potential geographical sources of such claims:

1. First, a European firm may face a claim filed in its home country regarding audit services provided to a company also residing in its home country. This is the typical geographical source of claims against European firms. It is worth noting here that "catastrophic" claims against audit firms do not only emanate from the U.S., but also from a number of EU Member States. This point is discussed more extensively later on in this chapter.
2. Second, a European firm may face a claim filed in a foreign country, most likely the U.S. to date, regarding audit services provided to a company residing in its home country if the audited company has some link (such as, for example, a secondary listing on one of the foreign country's stock exchanges, an establishment or a subsidiary) with the country in which the claim is filed.
3. Thirdly, a European firm may face a claim filed in a foreign country regarding audit services provided as part of the audit or group audit of a company domiciled in the foreign country. For example, this is the case for all the audit work referred by a U.S. firm of a network to a European firm of the same network and related to the audit(s) of European subsidiaries of U.S. firms.
4. Fourthly, a European firm appointed as group auditor may face a claim filed in a foreign country regarding the audit undertaken by another firm of a subsidiary in that country as, under the recently adopted Directive 2006/43/EC, the group auditor bears the full responsibility for the audit report in relation to the consolidated accounts.[29] However, no jurisprudence exists yet and the issue of group auditor liability needs to be further examined from a legal perspective.

In short, European audit firms are exposed to not only a "domestic" risk which varies within the EU according to the national auditor liability regime but also to a "foreign" risk if their domestic clients have some form of connection with a foreign country or the client ultimately resides in a foreign country.

[29] Article 27(a) of Directive 2006/43/EC of the European Parliament and of the Council of May 17 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directives 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EEC.

Data presented later in this chapter suggest that the few current transnational claims of significant size against European firms are all claims filed in the U.S..[30] None originate from another EU Member State.

In addition to the risks of transnational claims arising from the audit activities undertaken by itself, a firm may in the future also face a transnational risk arising from a claim filed against a network as a separate entity from its constituent member firms. In a few recent cases, claims by plaintiffs that networks should be held liable survived applications by member firms to dismiss or strike them out at a preliminary stage.[31] For example, in 2002, a court in New York stated that it was arguable that the international unit of a network could be held liable for the negligence of one the network firms because the firm simply had signed the accounts using the general name of the network and the partner of the firm and the firm itself were held out to the public as representatives of the network.[32] Moreover, this is also an issue which is still pending before a U.S. court in the Parmalat case[33]. It is not yet clear, however, whether, in the end, such a risk will effectively materialise in the sense that courts do indeed find the network itself as being liable.[34] [35]

In this regard it useful to note that, while their precise structure varies across networks, the larger networks consist of legally independent firms which operate under a generally common name and similar, if not identical, business procedures, processes and internal controls. Typically, a special entity, of which the firms of the network are members, provides the overall direction of the network. This central entity does not provide any services directly to clients and has few assets of its own.

The networks of many of the middle-tier firms are much looser structures with generally little central coordination and whose member firms do not always use a common name. The emergence of the potential risk of a claim against a network per se may deter the middle-tier firms from establishing stronger networks.

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[30] See details at Table 47.

[31] However, it should be noted that in the Worldcom case, a court held that because a member firm in a network commits a fraudulent or negligent act does not mean that network is automatically liable and, in the absence of credible evidence, dismissed the case against the network's central unit.

[32] Cromer Finance Limited and Primval NV et al. v. Michael Berger et al., 2002 U.S. Dist. LEXIS 7782.

[33] Parmalat, 2005 U.S. Dist. LEXIS 12553.

[34] In 2005, based on conventional agency theory, Judge Kaplan of U.S. District Court for the Southern District of New York ruled that the plaintiffs had adequately alleged that Deloitte Touche Tohmatsu and Grant Thornton International both had an agency relationship with the Italian firm of the network and therefore allowed the allegations against the network to stand.

[35] It is interesting to note that Andersen Worldwide, the coordinating unit of Arthur Andersen, paid U.S. $ 60 million to settle its potential liability in the Enron case as well as the potential liability of several ex-U.S. firms named as defendants in the case.

Another change in the risk environment faced by audit firms is the emergence of a new type of plaintiff.

According to representatives of a number of audit firms[36], until recently, most of the claims cases involved law firms specialising in such liabilities lawsuits. Because the business model of such law firms essentially depends on repeat interactions with the audit firms and their survival, there was little danger that a settlement would have been sought which endangered the long-term viability of a firm.

Nowadays, however, according to these representatives, a new type of plaintiff has emerged which is essentially only interested in a "one-shot game" aimed at maximising the financial payment from the audit firm without any consideration for the long-term survival of the firm. [37]

In their 2005 Securities Litigation Study PwC stated that the average costs of private securities litigation settlement in 2005 rose to U.S. $71.1m even excluding mega settlements like Enron. This is an increase of 156% from the 2004 average settlement figure of U.S. $27.8m. Similarly the average value of accounting cases in 2005 was U.S. $94m compared with a 2004 figure of U.S. $33.8m. One of the reasons for this dramatic increase is the change in lead plaintiff which following Sarbanes Oxley and the Private Securities Litigation Reform Act of 1995 is now more likely to be an institutional investor, such as a union or pension fund. By way of example 26 claims were settled in 2004 with a union or pension fund as lead plaintiff; in 2005, the figure was 35.

Audit firms, in addition to the risk of claims being filed against them in their home jurisdiction or a foreign jurisdiction, also face a further "transnational" risk that the reputation of the network brand may be seriously damaged in the market place for audit (and non-audit) services by a claim filed against a major member of their network.[38]

Before reviewing how audit firms manage their audit liability risk, we present first some facts about actual claims against audit firms in the U.S. and Europe.

[36] The list of representatives is provided at Annex 1.

[37] Such plaintiffs may be liquidators or asset managers or hedge funds, who in the absence of large own resources, may wish to maximize recoveries in the case of problematic investments they undertook as fiduciaries of the funds entrusted to them.

[38] Obviously, such a reputational risk is present under any auditor liability regime.

13.3 Claims against audit firms

United States

In the U.S. a large number of securities class actions are filed each year. However, the number of such filings citing explicitly auditors as defendants is small and has been falling in recent years, although as stated above, the amounts of mega-settlements and the average settlement figures were substantially higher. Moreover, this apparent decline is subject to upward revisions as auditors are often added as co-defendants later on during the litigation.

Table 42: Securities Class Action Case Filings - United States

Year	Total number of filings	Filings citing auditors as defendants	Percentage of total number of filings citing auditors as defendants
1996	147		
1997	178		
1998	258		
1999	205		
2000	203		
2001	176		
2002	266	14	6%
2003	206	10	6%
2004	217	8	4%
2005	200	5	3%

Notes: the data for 2001 exclude 309 "laddering cases". Prior to 1999, a small number of State only cases are included in the yearly figure. Following the adoption of the *Securities Litigation Uniform Standards Act* in 1998, securities class actions cases can only be filed in federal courts.
Source: PwC 2004 Securities Litigation Study for the period 1996 to 2001 and Stanford Law School Securities Class Action Clearinghouse for the period 2002-2005

It should be noted that the number of securities class action cases naming auditors as defendants does not provide a complete picture of claims against auditors as such claims can also be filed by a number of other parties such as the company itself, the liquidator in case of bankruptcy, etc. Unfortunately, we do not have comprehensive data on the total number of new claims filed each year by all parties (securities class actions and individual claims) in the U.S. against audit firms and which relates to audit services.

Moreover, to fully assess the change in the riskiness of statutory audits, one needs to look at the size of the claims made against audit firms and the size of their eventual settlements.

As of September 2005, AON[39], using only publicly available information, estimated that there were 20 outstanding claims against auditors in the U.S. where the damages sought or the estimated losses were U.S. $1 billion or more if the lawsuits are primarily directed against accounting firms and US$10 billion or more if the lawsuits are directed against audit clients and auditors are named as additional defendants.

At this stage, it is obviously not yet known what the actual settlement or award of the claims will be. A few very large claims were settled for large amounts in the past. But, special factors may have been at play. Moreover, past awards or settlements are poor indicators of likely future awards or settlements as they are characterised by substantial variation.

For example, of 59 cases[40] [41] concluded over the 8-year period of 1998 to 2005 and for which claim and settlement or award information is publicly available, the average award or settlement was slightly less than 12% of the claim or damages sought by the plaintiff. In about half of the cases, the ratio of settlement or award to claim or damages sought was less than 5% while in almost one fifth of the cases, the award or settlement ratio ranged from about 25% to almost 40%. In only one case, the award was 100% of the claim. Of the 59 cases, only 4 were concluded following a court award, and one of these was for 100% of the damages sought. Representatives of the Big-4 point to this as evidence of the risk of taking a case to court rather than reaching an out-of-court settlement in the U.S..

The bottom line is that, at the present time, there is a great deal of uncertainty about how the mega-claims mentioned above will eventually be resolved in terms of settlements or awards.

Obviously, what matters from a public policy point of view is not only the absolute size of the awards and settlements but also the capacity of audit firms to manage these.

Between 1999 and 2004, the gross costs of awards and settlements incurred by Big-4 firms in the U.S. rose from 7.6% to about 11%. Net costs, including insurance premiums and recoveries from insurance companies, rose even more sharply, almost doubling from 7.7% of total audit fee revenues in 1999 to 14.2% in 2004 (see Table 43).

[39] AON Risk Professional, *Mega-Claims Analysis of a selection of large publicly known matters involving auditors Updated September 21, 2005*.

[40] AON Risk Professional, *Awards / Settlements Analysis of a selection of publicly known matters involving auditors,* March 2006.

[41] 18 cases were non-U.S. cases.

Table 43: U.S. Audit Practice Protection Costs – Big-4 firms (U.S. $ million)						
	1999	2000	2001	2002	2003	2004
Revenues from audit services	6,078	6,557	6,701	6,598	7,930	8,981
Costs of judgments, settlements, legal costs and reserves	463	630	679	733	816	978
Gross cost as % of revenues	7.6%	9.6%	10.1%	11.1%	10.3%	10.9%
Insurance premia net of insurance recoveries	5	-89	91	89	31	296
Net audit practice protection costs	468	541	770	822	847	1,274
Net costs as % of revenues	7.7%	8.3%	11.5%	12.5%	10.7%	14.2%

Source: Study undertaken by Charles River Associates, Inc for U.S.Big-4 firms.

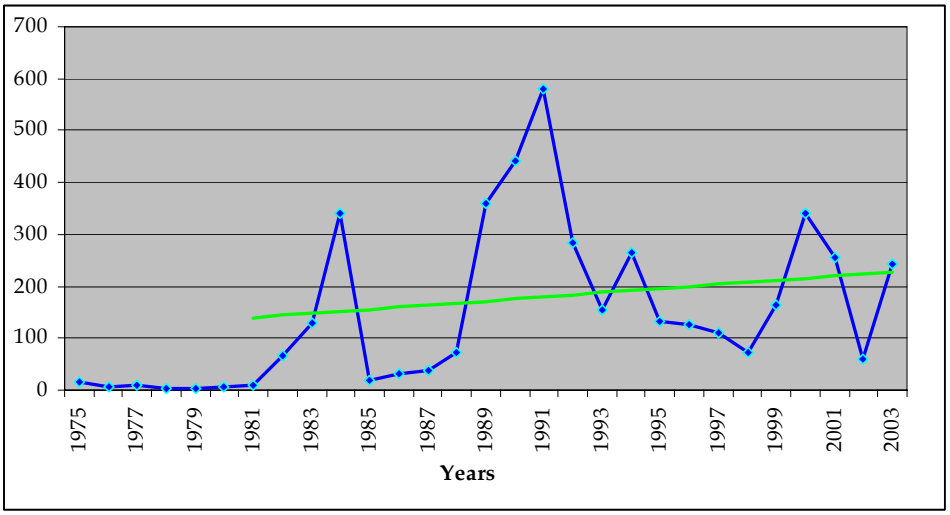
Europe

It has not been possible to obtain comparable total protection costs to those in Table 43 for the European firms of the Big-4 networks although informal communications from representatives of these networks suggest that, while showing a rising trend, the total cost as percentage of revenues is probably somewhat lower in the EU than in the U.S..

However, the actual cost of claims faced by the major European audit firms shows a very slight upward trend and considerable fluctuations, largely related to the business cycle.

The data on the actual cost of claims in Figure 4 and Table 44 are reported by policy year and reflect the total costs to the firms and the insurance sector of these claims. In other words, they cover both actual payments and the reserves set aside by insurance companies to cover claims which have not yet been resolved. It is important to note that, because the likely award/settlement quantum of each claim takes a long time to mature, the data of the most recent years provide an incomplete picture of the likely effective cost of recent claims.

Figure 4: Total cost of claims against Big-5/4 firms in the EU by policy year –millions of U.S. $ at 2005 prices



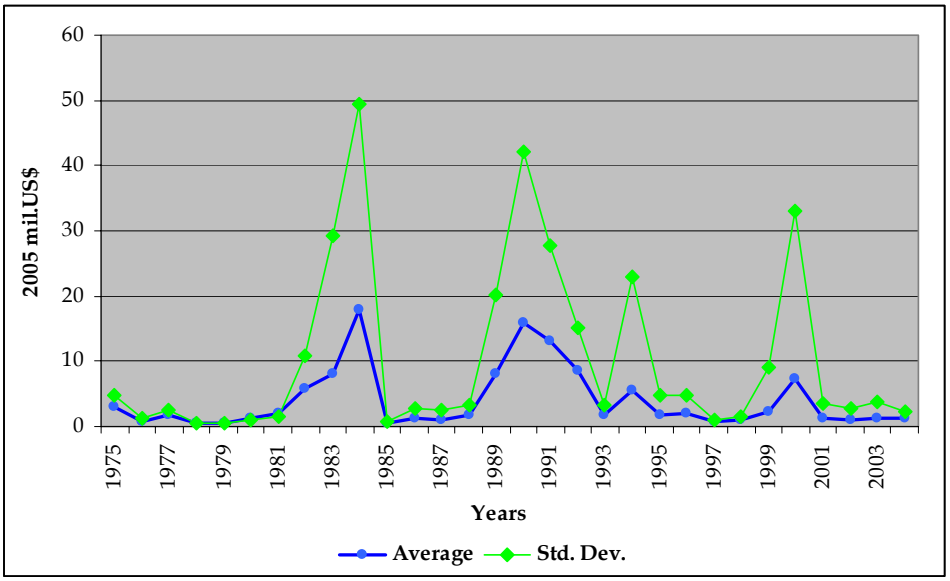
Source: AON

Table 44: Costs of claims against Big-5/4 firms in the EU by policy year – millions of U.S. $ at 2005 prices

1970	**1971**	**1972**	**1973**	**1974**	**1975**	**1976**	**1977**	**1978**	**1979**
					15.2	7.6	8.7	3.0	2.1
1980	**1981**	**1982**	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**
4.8	9.6	64.6	129.0	340.0	18.5	31.7	39.0	71.7	360.3
1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
441.7	581.3	284.1	156.0	265.0	131.0	125.0	102.0	76.8	165.0
2000	**2001**	**2002**	**2003**						
339.0	256.9	60.9	224.1						

Source: AON

Figure 5: Average claim cost against Big-5/4 in the EU by policy year at 2005 prices and standard deviation



Source: AON

Over the period 1981 to 2003, the average cost per claim was U.S. $ 187 million (see Figure 5 above) but the average yearly standard deviation is large at U.S. $11.4 million. This reflects the fact that, in a few years, one or several claims were resolved for an amount considerably larger than the average cost per claim.

The history of actual payments provides only a partial picture of the situation faced by audit firms as it does not put such payments in perspective relative to the claims faced by the firms.

To shed some light on this point, AON has compiled for the present study information on the ratio of the actual payment to the initial claim(s) for all payments of U.S. $ 50 million (at 2005 prices) or more by EU audit firms over the period 1977-2005. In total there are 18 such cases (see Table 45).

Of the 18 cases, 8 (or 42%) involved payments of no greater than 10% of the original claim and 14 (or 78%) payments were no greater than 25% of the original claim. However, 1 payment was in excess of 50% of the original claim.

Table 45: Ratio of amount paid to damages sought – all payments by Big-5/4 EU firms in excess of U.S. $ (at 2005 prices) from 1975 to 2005

	10m-30m	30m-100m	100m-200m	200m-1b	>1b	Total
0-5%					5	5
5-10%				1	2	3
10-15%				2		2
15-20%				2		2
20-25%				2		2
25-30%						0
30-35%				1		1
35-40%			1	1		2
40-45%						0
45-50%						0
>50%		1				1
Total	**0**	**1**	**1**	**9**	**7**	**18**

Note: Ranges based on damages sought (based on public sources)
Source: AON

The information compiled by AON also vividly illustrates the significant contribution of legal defense costs to the total costs of a settled claim (see Table 46).

These legal costs did not exceed 10% of the actual loss payment in only 4 of the 18 cases (20% of all cases). In a further 7 cases, the legal costs were in the range of 10% to 20% of the actual payment, and in 3 cases they exceeded 50% of the claim payment.

Table 46: Ratio of legal fees to paid loss – all payments by Big-5/4 EU firms in excess of U.S. $ (at 2005 prices) from 1975 to 2005

	10m-30m	30m-100m	100m-200m	200m-1b	>1b	Total
0-5%				2		2
5-10%				1	1	2
10-15%				3	2	5
15-20%				1	1	2
20-25%				1		1
25-30%		1				1
30-35%			1			0
35-40%					1	2
40-45%						0
45-50%						0
>50%				1	2	3
Total	**0**	**1**	**1**	**9**	**7**	**18**

Source: AON

The firms of the major European networks (Big-4 + two largest middle-tier networks) face currently in a number of EU Member States a series of very substantial claims or potential claims related to statutory audit services which, at the high end of the claims' distribution, vastly exceed the available insurance cover and the firm's own resources.

In total, 28 of the 69 of the claims and potential claims shown in Table 47 are in excess of U.S. $100 million, 16 are in excess of U.S. $200 million and 5 are in excess of U.S. $1 billion.

Of the 69 cases included in the table, 10 have already or may furthermore result in U.S. litigation in addition to the case being pursued domestically.

In terms of the type of plaintiff pursuing a claim against major European firms audit firms, it is interesting to note that only 19% of the matters involve the client directly but 38% involve the liquidator/receiver/administrator who may be tempted to maximize the recovery, 32% shareholders/investors/directors and only 3% creditors (see Table 48).

Finally, in terms of the sectoral distribution of the source of the claims, two sectors (consumer and industrial markets, financial services[42]) account for almost 60% of the cases for which the sector is known (see Table 49).

[42] With regards to the financial services sector, it is worthwhile to recall that the Big-4 firms hold about 90% of the audit mandates in the EU25 and that only 18% of financial sector respondents indicated that they were prepared to consider a middle-tier firm as provider of audit services.

Table 47: European Union - Outstanding matters involving major accounting firms- audit only, by country – U.S. $

Country	Liability cap in place	$10m-$30m	$30m-$100m	$100m-$200m	$200m-$1b	>$1b	Total
Austria	Yes	2	1	0	0	0	**2**
France	No	2 (1)	0	1	1	1	**5 (1)**
Germany	Yes	2 (1)	2	1	0	0	**5 (1)**
Italy	No	2	6	5	5	3 (2)	**21 (2)**
Republic of Ireland	No	0	1 (1)	0	0	0	**1 (1)**
United Kingdom	No	6 (1)	1	3 (2)	3	0	**13 (3)**
Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia	No except Slovenia	0	0	0	1	0	**1**
Belgium, Netherlands, Luxemburg	No except Belgium since December 2005	3	1	1	1 (1)	1 (1)	**7 (2)**
Denmark, Finland, Sweden	No	3	2	1	0	0	**6**
Portugal, Spain	No	4	3	0	0	0	**7**
Cyprus, Greece, Malta	No except Greece	0	0	0	0	0	**0**
European Union		**24 (3)**	**17 (1)**	**12 (2)**	**11 (1)**	**5 (3)**	**69 (10)**

Note: the numbers in parenthesis indicate the number of domestic EU matters which either have, or could have, a USA litigation connection. Major accounting firms are: Deloitte Touche Tohmatsu, Ernst & Young, KPMG, PricewaterhouseCoopers, BDO, Grant Thornton.
Source: AON

Table 48: Plaintiff type in claims against major European audit firms	
Plaintiff type	**Percentage share of total number of claims**
Liquidators/receivers/administrators	38%
Company	19%
Shareholders/investors/directors	32%
Creditors	3%
Other	4%
Multiple claimant types	4%

Source: AON

Table 49: Industry sector of company whose statutory audit is giving rise to a claim against a major European audit firm	
Industry sector	**Percentage share of total number of claims**
Consumer and industrial markets	30%
Financial services	23%
Information, communication & entertainment	16%
Infrastructure, government & healthcare	4%
Other	20%
Unknown	6%

Source: AON

14 Audit liability risk and insurance[43]

14.1 Background

Essentially, audit firms manage the statutory audit liability risks through a two-pronged approach, namely the implementation of strong internal risk management processes and insurance.

Risk management

First, they have developed internal risk management processes such as audit quality processes, and client acceptance and client review processes whereby audit firms periodically assess the riskiness of each of their audit mandates. As a result of these processes, which have been tightened post-Enron, at times audit firms have declined to take on new clients or resigned from existing mandates.

In this regard, it is interesting to note that, because of potential liability risk, a number of the Big-4 and middle-tier respondents to the LE auditor survey indicated that they had declined to take on an assignment for a listed company or resigned from an assignment for a listed company.[44]

Insurance

Second, audit firms have put in place insurance programs to provide partial cover for professional liability.

Finally, they self-assume the uninsured part of the risk.

In the sub-sections below, we focus on the professional liability insurance of audit firms. In Section 15, we discuss in greater detail the availability in the market place of liability insurance for audit firms.

Before reviewing the insurance programs of the audit firms, it is important to note that audit firms buy liability insurance for the firm as a whole to cover the whole range of their activities and not specifically for audit services.

[43] This section is based on material and information provided by the major audit firm networks as well as detailed discussions with the risk managers and insurance managers of these major audit firm networks.

[44] Additional information on this point is provided in Section 32.

14.2 Insurance programs of audit firms

Audit firms are typically required by law or by their professional organisation to have a certain level of professional liability insurance in the EU Member States (see Table 50 overleaf).

The Big-4 networks' insurance programs rely heavily on their captives and a limited amount of commercial re-insurance of their captives.

In response to declining availability of coverage in the market place in the 1980s, the Big-4 set up captives to provide low levels of insurance with more comprehensive coverage (i.e. lower retentions) to assist their smaller firms which could not afford the larger retentions demanded by the market place.

Moreover, the 1990s saw a number of insolvencies of commercial insurers which had previously provided coverage to the firms and who defaulted on 100% of their claim payments. Also, the market for audit firm liability insurance tightened considerably.

By the end of the nineties, only a limited amount of insurance was available to Big-4 firms. As a result, their captives needed to insure almost all member firms.

The captives are mutuals owned by the firms of a network and, except for a limited amount of re-insurance, mutualise the risk across the network's member firms. Premia paid by member firms form the capital base of these captives which do not have access to external capital. Thus, even a captive can provide only a limited amount of coverage. Typically, they provide specific low level limits to each of their member firms while higher levels of cover are often shared among all the member firms.

Because of their limited capital base, the captives impose annual and/or pluriannual limits (i.e. number of events covered) in the different tranches of coverage provided and, like any insurer, cannot provide full coverage of the risk faced by audit firms.[45] As noted above a small part of the coverage provided by the captive is re-insured.

With a few exceptions, the middle-tier networks do not have captives and their only insurance comes from the market place. This is due to the fact that the networks of the middle-tier firms are generally much looser, less centrally co-ordinated organisations of firms than those of the Big-4.

Obviously, the risk that is not covered by the captive or commercial insurers has to be assumed by the audit firm itself. In this regard, it is important to recall that captives are owned by the members of the network and their insurance capacity is limited by their capital. As a general statement, for the

[45] The limited capacity of captives is illustrated by the fact that Arthur Andersen's captive was unable to pay earlier settlements because of concerns over the liability arising from Enron, Worldcom and an Australian matter, given it knew the parent organisation would in all likelihood not be around to pay additional premiums.

largest firms captive insurance is simply a timing mechanism that smoothes the effect of claim payments and for the other firms it has the additional important function of sharing risk with other policy holders who are members of the same network. Ultimately, all claim payments have to be funded by premium receipts.

Before reviewing the state of the insurance market for liability insurance for audit firms, we discuss how the cost of the liability insurance bought by audit firms is passed on to their clients.

Table 50: Mandatory Insurance of Audit Firms in the EU25			
Country	**Mandatory insurance**		**Minimum coverage**
	Yes/ No	**By law/ others**	
AUSTRIA	Yes	By law	The sum insured must not be less than €72,673 for each individual event insured
BELGIUM	Yes	By the professional association	€619,733 per event
CYPRUS	Yes	By the professional association	Highest of €58,500 and 10% of annual professional fee
CZECH REPUBLIC	Yes	By law (available at professional association)	The sum insured should be adequate to the possible and reasonably expected damage (no minimum coverage)
DENMARK	Yes	By law	€268,240 multiplied by the numbers of auditors is required per year (and per claim). The insurance policy subscribed by firms employing more than 10 auditors must cover €2,682,403 at a minimum per year. Firms employing less than 6 auditors can subscribe to an insurance policy with maximum annual mandatory coverage of €268,240 regardless of the number of liable auditors
ESTONIA	Yes	By law	Established by decision of the management board of the Board of Auditors (€12,782)
FINLAND	No	In practice, all auditors cover their work with voluntary insurance protection provided by the group insurance policy of the Authorized Public Accountants' Institute	-
FRANCE	Yes	By law	€2,500,000 minimum per claim

Table 50: Mandatory Insurance of Audit Firms in the EU25

	Mandatory insurance		
GERMANY	Yes	By law	Minimum coverage of €1million for unlisted companies and €4million for listed companies
GREECE	Yes	By law	Insurance cover may not be less than the 150% of the total fees which the Certified Auditors received in the previous financial year and in no case less than 10 times the total annual remuneration of the President of the Supreme Court
HUNGARY	Yes	By law	Fixed by the Statute of the Chamber of Auditors acts per year and per claim
IRELAND	Yes	By professional association	Depending on the professional association, 2.5 times gross practice income to a maximum of €1.3million or to €1.5million (max. €15,000 or €38,000)
ITALY	Yes	By law	For auditing firms having 50 employees or more: approximately €980,000; for all other firms: approximately €516,000
LATVIA	Yes	By law	Total of auditor's audit fee income in previous accounting year, not less than €43,200. For a commercial audit firm (except for partnerships which do not employ auditors as employees), total audit fee income in the previous accounting year, not less than €144,000
LITHUANIA	Yes	By law	Annually, at least €28,962 per insured event for auditing public interest entities and at least €28,962 in total for auditing other enterprises
LUXEMBOURG	Yes	By professional association	Coverage per event and per year that complies with the professional activities of the auditor or the audit firm as a whole
MALTA	Yes	By law	€58,250 per year and a coverage of €58,250 in respect of each warrant holder forming a partnership
NETHERLANDS	No	By professional association	€300,000
POLAND	Yes	By law	Level depends on the services rendered: €45,000 if the entity provides audits of financial statements, €10,000 if the entity provides bookkeeping services; minimum coverage amounts provided for all activities performed are summed up

Table 50: Mandatory Insurance of Audit Firms in the EU25

	Mandatory insurance		
PORTUGAL	Yes	By law	€500,000 for individual statutory auditors (even those included in a firm) and the maximum coverage is €2,500,000. Also, €2,500,000 for audit firms listed in the *Commisão de Mercado de Valores Mobiliários* and for the other firms by multiplication of the number of partners and the minimum coverage for individual statutory auditors
SLOVAK REPUBLIC	No	-	-
SLOVENIA	Yes	By law	At least, the highest price for auditing services on the basis of an individual auditing contract, multiplied by 15, or the sum of prices for auditing services on the basis of all auditing contracts multiplied by 2.5
SPAIN	Yes	By law	The amount increases from the first year (€300,506 per individual or per partner of the firm) in 30% of the turnover exceeding the equivalent amount of the said minimum deposit, for the auditing activity of the previous financial year
SWEDEN	Yes	By law	Depends above all on the number of auditors in the practice. The amount varies between €440,000 per claim and up to €880,000 per claim or €2.65 million per year
UNITED KINGDOM	Yes	By law	Depends on professional body. ICAEW Scotland and Ireland, the maximum amount of insurance required by regulations is €1,463,958 or 2.5 times practice income if that would be a lower amount (subject to an absolute minimum of €73,206 for a sole practitioner or €146,413 otherwise). In practice, many firms have more insurance than this, usually written on a 'per claim' basis.

Source: EC DG Internal Market and Services, *Questionnaire on the legal systems of civil liability of statutory auditors in the European Union- Partial update of the study carried out by Thieffry & Associates in 2001,* Note prepared for the Auditor Liability Forum meeting of 16th March 2006.

14.3How are insurance premiums passed on to clients

A key issue in the whole debate about the level of risk associated with statutory audits is whether the companies being audited and their stakeholders are being charged the full cost borne by the audit firms and their insurers.

We have already noted earlier in the report that, according to the respondents from the Big-4 firms, the risk assumed by audit firms is not fully priced into the audit fees. Competition was cited as the reason for this situation.

It is also possible that the full risk has never been properly costed because it is in large part self-assumed by the Big-4 firms. A number of representatives from the Big-4 have noted that this could indeed be a factor.

As concerns the actual audit firm liability premiums paid to insurers, the vast majority of the firms (Big-4 and middle-tier firms) have indicated that the premiums are about equally passed on to audit and non-audit clients.

In the absence of specific costing by insurers of the cost of liability coverage of statutory audit and other services, this is not an unreasonable assumption unless a firm holds the view that its statutory audit activities are intrinsically more risky than its other activities.

Table 51: Allocation of liability insurance premiums to audit and non-audit fees by audit firms
(% of respondents)

	Big-4 firms	Middle-tier firms
Liability insurance premiums are fully reflected in audit fees and not at all in fees for non-audit services	3	14
Liability insurance premiums are mainly reflected in audit fees and only marginally in fees for non-audit services	10	14
Liability insurance premiums are about equally reflected in fees for audit and non-audit services	84	62
Liability insurance premiums are only marginally reflected in audit fees and mainly in fees for non-audit services	3	11
Liability insurance premiums are not all reflected in audit fees and fully in fees for non-audit services	0	0

Source: London Economics survey of audit firms

14.4 Do insurance availability and cost vary with auditor liability regime?

Survey respondents were also asked to indicate whether the importance of insurance premiums in the audit fees varied with the legal liability regime.

Slightly less than 75% of the survey respondents indicated that this did not make any difference (see Table 52).

Thus, these responses suggest that the existence of a limit of the liability does not have any significant impact on the audit fees charged to clients.

Table 52: Importance of insurance premiums in audit fees in countries with some form of limited liability
(% of respondents)

	Big-4 firms	**Middle-tier firms**
Loadings for insurance/risk cover are higher	12	8
No difference in loadings	68	72
Loadings for insurance/risk cover are lower	11	20

Source: London Economics survey of audit firms

15 Availability of liability insurance for audit firms[46]

Procuring liability insurance up to the national legal requirement is generally not a problem. In a number of cases, national auditor organisations have implemented schemes with insurance companies under which such insurance can be obtained through the national organisation, or national organisations have worked with one or more insurance providers or insurance brokers to ensure that their members can buy the necessary insurance directly from an insurance company.

It should be noted, however, that these insurance contracts typically carve out any referred work and thus exclude from coverage the transnational risk emanating from the U.S. in the case of referred work. Some of the contracts also carve out the transnational risk related to the connection of the domestic audit client company with the U.S..

Finally, the risk that is not covered by the captive or commercial insurers has to be assumed by the audit firm itself.

In 1998, Moizer and Hansford-Smith published an article reporting the results of interviews with insurance brokers and a Big-6 audit partner on the level of insurance available to the Big-6 firms in the UK. The key conclusion of the article was that there were "*some very large gaps in the coverage of the big-6 liability claims, especially between U.S. $ 150 million and U.S. $ 240 million and above $340 million*" (Moizer and Hansford-Smith, 1998, p. 200).

The specific circumstances of each of the Big-4 networks vary. But according to Swiss Re, the only lead re-insurer with an established audit liability re-insurance program, the commercial re-insurance cover available is less than 5% of some of the mega-claims currently outstanding against some of the Big-4 firms. In other words the commercial re-insurance cover available to the captives of the Big-4 networks is very limited and has fallen in recent years to much below the figure of U.S. $340 million identified by Moizer and Hansford-Smith in their 1998 article. Moreover, this included first loss coverage which is not available today. Nowadays, it is even difficult to procure some levels of second loss coverage.

Moreover, any available coverage is subject to strict conditions such as, for example, one limit for a second claim only.

From a theoretical point of view, the lack of availability of insurance is a priori a questionable concept because in functioning markets there exists always a price level at which demand and supply will balance. Therefore, the

[46] This section is based on extensive discussions with representatives of insurance companies and re-insurers.

"lack of availability" measure is more reflective of a lack of insurance capacity at prices that are perceived by audit firms as affordable in terms of being able to pass on the costs to the clients of audit firms. This implies that the audit market fails to properly price the full economic cost of the riskiness of an audit. That being said, the risk of mega-claims may be difficult to price because of a lack of predictability, both in terms of occurrence and quantum.

Moreover, liability insurance may not necessarily intend to provide 100% coverage as a key underlying concept of civil liability is to not only offer compensation but also to provide an incentive to avoid professional malpractice. A reasonable balance needs to be struck between the risk which has to be carried by a profession, including through its own captive(s), and the risk which can be transferred to a third party through insurance.

A number of reasons explain the current lack of commercial insurance capacity in the market place.

Liability insurance in general was not very profitable in recent years as shown in Table 53 overleaf.

Table 53: Profitability of total liability insurance in various countries – 1997 - 2002

Average loss ratio (direct claims incurred / direct premiums written)	
USA	99.7%
France	113.2%
Germany	65.1%
Italy	102%
UK	99%

Note: Excluding costs.
Source: Swiss Re Sigma, The economics of liability losses – insuring a moving target, No. 6/2004

Within liability insurance, auditor liability insurance was a line making substantial losses since the mid-1980s as shown in Figure 6 below. Only data up to the early nineties are shown in the figure because a number of matters from the mid-nineties are still outstanding. But, according to representatives of the insurance industry, the situation did not improve in the nineties. For example, in Germany, the loss ratio over the period 1997 – 2002 stands at 189%.[47] This latter figure does not imply that the German auditor liability limitation did not limit the size of the awards or settlements but simply reflects the fact the auditor liability insurance had been priced too low

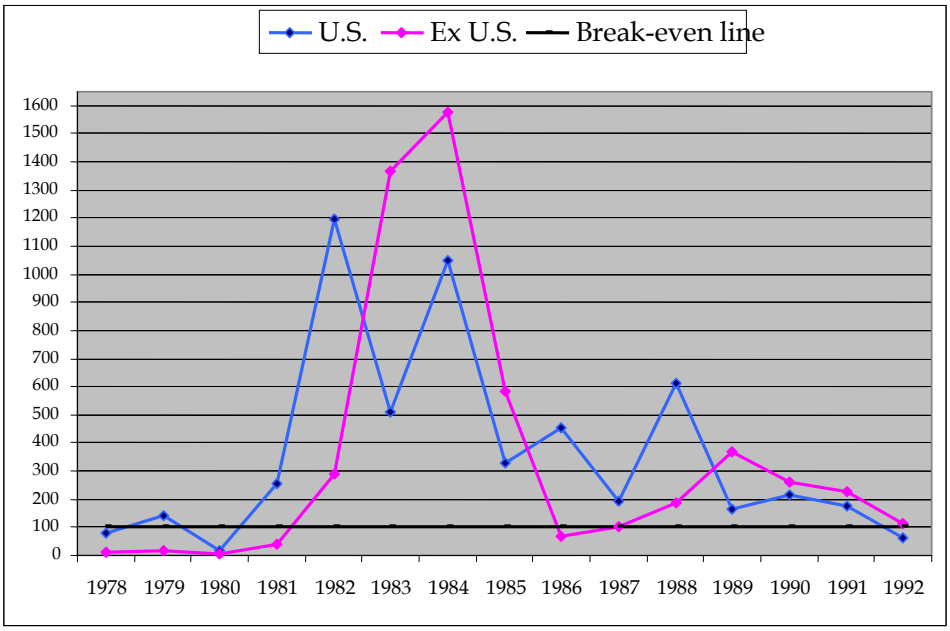
[47] Information received from Versicherungsstelle Wiesbaden.

relative to the actual outcomes in terms of number and, possibly nature, of claims.

Over the period from 1981 to 1992, there were only two years during which the underwriting of auditor liability in the world excluding the U.S. was a profitable line of business and only 1 year in the case of the U.S..

In a few years, the loss ratio exceeded 1,000%, inflicting very serious losses on the insurance companies which had underwritten this type of risk. For example, over the period 1981 to 1992, the loss ratio, that is the ratio of the sum of the claims incurred over the period 1982 to 1992 to the sum of the premiums received over the same period, was 266% in the world excluding the U.S. and 305% in the U.S, a much worse performance than shown by liability insurance in general over the last 5 years (see Table 53).

Figure 6: Loss ratio in auditor liability insurance - U.S. and World ex U.S. – 1978 - 1992



Source: AON

As a result, commercial insurance availability fell drastically in the 1990s and premiums paid by the Big-4 networks for the re-insurance of their captives

increased massively for reduced insurance. They doubled over the last five years while coverage was sharply curtailed.

Moreover, according to the insurance industry representatives, the current characteristics of the audit sector are such that key insurance conditions cannot be satisfied. In essence, for a risk to be insurable, one has to be able to diversify the risk, and the risk has to be predictable in terms of both probability and magnitude.[48]

- The small number of big-firm networks severely limits the possibility for the diversification of the risk across a number of policyholders. As it is the network which procures the insurance for its member firms, there are only four parties across which the risk could be diversified, too small a number.
- Moreover, future awards/settlements, especially their magnitude, are not predictable making it difficult to assess the risk that would be taken on by the insurance companies and to price that risk.
- Finally, audit firm liability claims take a very long time to be resolved. A period of 5 to 10 years, or more for some bigger claims, is not uncommon for audit firm liability claims according to industry sources. This in itself creates uncertainty about the required level of reserves.

The bottom line is that, given these characteristics of audit liability risk, it is likely that the insurance industry's appetite for providing coverage for such risk will remain muted.

In this regard, it is interesting to note that other segments of the liability insurance sector (such as professional insurance for doctors, directors and officers (D&O), enterprise liability insurance, etc) do not appear to be affected, at least so far, by this lack of capacity in the market.

The cost of medical liability has also grown very rapidly and both the level of medical malpractice insurance premiums and the reduced availability of such insurance are a matter of serious policy concern in a number of countries.[49] However, for a number of reasons, the current situation regarding auditor liability insurance for the larger audit firm networks is not comparable to that for medical malpractice insurance. The magnitude of the claims facing potentially audit firms is of a considerably different scale than that of claims potentially faced by the medical profession. Auditors are typically jointly and severally responsible with other parties such as company directors and officers for any harm to plaintiffs while the medical profession is only responsible for its own actions. Finally, the audit firms of the larger networks face foreign risks while the medical malpractice risk is essentially a domestic risk.

[48] See, for example, Swiss Re Sigma, *The economics of liability losses – insuring a moving target*, No 6/2004.

[49] See for example OECD (2006) *Coverage of Medical Malpractice in OECD Countries.*

The insurance market for D&O, despite the riskiness of the line, appears to soften at the present time with insurance capacity increasing and insurance premia on a downward trend. A key difference is that, in the case of D&O and enterprise liability insurance, the risk can be diversified across a wide range of policy-holders while it cannot in the case of the Big-4 firms.

At issue then is whether any steps could be taken in the insurance market to address the lack of insurance coverage and the consequences of a mega-claim resulting in major settlement well in excess of the cover provided by the insurance market.

In the sections below, we explore these two points in greater detail starting with the consequences of a mega-claim.

16 The threshold at which a mega-claim results in a wipe out of a major audit network

The information provided in this section has, for obvious reasons, been very largely provided by representatives of the Big-4 firm networks.

A mega-scale claim resulting in a large settlement of several hundreds of millions of euros will put stress on the firm having to settle such a claim.

At issue, however, is the size of such a settlement that would imperil the existence of a Big-4 network which, in turn, may have significant consequences for the functioning of capital markets.

In undertaking such an analysis it is important to distinguish those firms of a network that are absolutely critical to its survival, mainly through the referral work they generate for other parts of the network, from the others.

While the demise of a non-key firm may entail some reputational loss for the network as a whole, and potential problems for the firm's clients in finding a suitable and available replacement audit firm, it will generally not result in wide-spread disruption across many capital markets.

In contrast, the demise of a linchpin firm in a network may imperil the whole network and thus have wider repercussions for capital markets in Europe.

How could such an event occur? Essentially, once the limits provided by the captive have been exhausted, the burden of a large-scale settlement has to be borne by the firm and its partners.

In order to make the large scale payment to the plaintiff(s), the partners would have to mobilise their assets or, given the illiquid nature of these assets borrow against their assets. The firms themselves have practically no assets which could be liquidated to fund any award or settlement. For example, the net assets of the UK firms of the Big-4 networks were as follows in 2005: PwC, £556m (30th June); KPMG, £333m (30th September), E&Y, £330m (30th June) and DTT, £280.7m (31st May). But these assets essentially represented the working capital of the firm and the partners' income of the year and, therefore, cannot be viewed as an additional potential source of funds to meet any claims.

In practice, this would imply that the partners take significant cuts in future incomes as they will have to reimburse their borrowings out of their future income. Obviously, a key assumption is that clients do not start to flee once the settlement is known and worries about the survival of the firm spread through the market place.

At issue then is the reduction in income that typically partners would be willing to tolerate before jumping ship and endangering the viability of the

firm. As shown later in Part IV, the risk associated with unlimited auditor liability has reduced the attractiveness of the profession and a significant income cut for a number of years will only exacerbate the problem.

While views about the precise estimates vary, a sustained income drop in the range of 15% to 20% would result in such a situation. In other words, once the insurance coverage provided by the captive is exhausted, a settlement that would result in such a drop in partners' income could gravely imperil its survival.

The problems faced by the U.S. accounting firm Laventhol in the late 1980s and early 1990s are instructive in this regard. Laventhol faced a number of suits in the late 1980s and following various large awards against the firm and settlements, in April 1990, the firm put a 50% reduction on partners' draws. Partners started to leave and by October 1990 the reduction in partners' draws was increased to 80%, and by November 1990 the firm had to file for bankruptcy.

What do the assumptions discussed mean in practice? Below we provide, for illustration, for the four major UK firms, two estimates of the amount of funds that would be available for meeting one or several claims and allow the firm to still survive, once the captive's resources are exhausted. These estimates are based on the 2005 figures of operating income available for distribution to the partners and different assumptions regarding the extent of the drop in partner income that is sustainable (15% or 20%), the acceptable length of the period during which the income cut has to be sustained (3 or 4 years) and the reputational effect (a 10% fall in profitability due to loss of clients and fees or no profitability reduction).

The data in Table 54 show that, in the more stringent scenario in which the partners accept to take an income cut of 15% for 3 years and the profitability of the firm falls by 10%, an estimate of the capacity of absorption of a Big-4 firm in the U.K ranges from €170 million to €365 million depending on the firm. This would be the maximum amount (single claim or multiple claims not exceeding that amount) a firm could afford to pay in award or settlement without gravely endangering its survival once the limited insurance coverage through the captive is exhausted. It would not be able to sustain a second claim of such a size in the immediate period following the settlement of the first claim as its resources and those of the captive would need to be rebuilt over a number of years.

In the scenario in which partners make a greater contribution, the capacity of absorption ranges from €255 million to €540 million under the assumptions listed above.

Such funds would be available to settle any number of claims. But, obviously, the larger the number of claims to settle, the smaller the amount per claim the firm can afford.

As, in the U.K., there are currently 6 claims or potential claims in excess of €250 million (see Table 47), the threshold figures reported below clearly illustrate the risk faced by large audit firms.

We have also added for illustration the case of a hypothetical firm with €200 million in turnover.[50] With profits of €52 million[51], the capacity of absorption ranges from €28 million to €42 million, depending on the number of years the income reduction is sustained.

Table 54: Estimates of award/settlement threshold above which major UK firm would fail – in € millions

	Firm				
Threshold assumptions	Deloitte	E&Y	KPMG	PwC	Hypothetical firm with €200m in turnover
15% cut in Partner income over 3 years and 10% reduction in profitability	325	170	240	365	28
20% cut in Partner income over 4 years and no reduction in profitability	480	255	355	540	42

Source: London Economics

Unfortunately, there exists no publicly available operating income data for the major firms in the other Member States. But, representatives of the Big-4 firms informed us that it would be reasonable to assume that the capacity of absorption of each firm is broadly proportional to the number of partners in the firm.

[50] Such a smaller size firm is more reflective of the actual Big-4 firm size in a number of non-UK Member States.

[51] The ratio of profits to turnover is assumed to be 0.26, i.e. the average ratio of the Big-4 firms in the UK in 2005.

Thus, for example, in the case of PwC, the capacity of absorption of the German firm would be about half of that of the UK firm and that of the French firm about a tenth of the UK firm.

17 Impact of potential external quality oversight bodies on audit quality and liability risks

The creation of external quality oversight bodies could theoretically reduce the problems faced by audit firms in finding insurance coverage in the commercial market place as an audit firm with good quality assessments and reviews from the oversight body would signal a lower risk than an unrated audit firm.

In the discussions with the insurance companies and re-insurers, the latter, while accepting the theoretical argument, expressed the view that, in light of the more fundamental issue of lack of predictability and diversification possibilities, the impact of the existence of such on oversight body on insurance availability would be limited.

In terms of the respondents to the various surveys, it is noticeable that Big-4 firms are more optimistic about the audit quality improvements that will result from the creation of the oversight bodies (see Table 55).

But, a majority of EU respondents and close to a majority of U.S. respondents expect some or a definite quality improvement. This view is consistent with the point, expressed later in the theoretical discussion of the incentives of auditors to deliver high quality audits, that such oversight bodies are useful drivers of quality complementing the incentives flowing from the liability regime.

Table 55: Impact of an independent public auditor oversight body on audit quality

	Audit firms		Companies		Institutional Investors
	Big-4	**Middle-tier**	**EU**	**U.S.**	
Will greatly improve the quality	3%	14%	9%	12%	5%
Will improve somewhat the quality	78%	48%	48%	36%	50%
Will have no impact on the quality	20%	38%	42%	42%	45%
Will result in somewhat lower quality	0%	0%	0%	9%	0%
Will result in lower quality	0%	0%	0%		0%

Source: London Economics surveys of audit firms, companies and institutional investors

No significant liability risk reduction is expected either side of the Atlantic as a result of the public oversight board.

With regards to audit liability risk, the majority of EU respondents across the four stakeholder groups do not expect any change, and 20% to 30% expect a small reduction in the case of middle-tier firms, companies and institutional investors (see Table 56).

In contrast, slightly less than half of U.S. respondents expect no change and 33% a small reduction in risk.

Table 56: Impact of an independent public auditor oversight body on audit liability risk

	Audit firms		Companies		Institutional Investors
	Big-4	**Middle-tier**	**EU**	**U.S.**	
Will reduce the audit liability risk	1%	11%	15%	3%	0%
Will reduce somewhat the audit liability risk	13%	23%	29%	33%	30%
Will have no impact on the audit liability risk	58%	65%	53%	45%	70%
Will increase somewhat the audit liability risk	25%	2%	3%	15%	0%
Will increase the audit liability risk	3%	0%	0%	3%	0%

Source: London Economics surveys of audit firms, companies and institutional investors

Finally, the majority of audit firms, both Big-4 firms and middle-tier firms, are of the view that the existence of an independent public oversight body will have no impact on the availability of insurance coverage (see Table 57).

Table 57: Impact of an independent public auditor oversight body on availability of insurance coverage for audit firms

	Big-4 audit firms	Middle-tier audit firms
Will increase availability of coverage	1%	10%
Will increase somewhat availability of coverage	8%	31%
Will have no impact on the availability of coverage	91%	59%

Source: London Economics surveys of audit firms, companies and institutional investors

18 Alternative risk protection solutions

In this section we review whether alternative risk protection solutions could be devised to deal with the lack of insurance provided by commercial insurers and re-insurers for large scale audit liability risk.

In considering such alternatives, it is important to remember that commercial insurers and re-insurers do not provide much cover for auditor liability because, in their view, this is not a profitable business and the basic insurance principles cannot be satisfied. At issue is not so much the cover for low level liability that is mandatory in most EU Member States[52], but the individual firms' insurance of larger domestic and international risks, and the re-insurance of the captives of the large audit firm networks which themselves mutualise the large domestic and international liability exposures across the networks.

Among the various economic sectors, the pharmaceutical industry is typically viewed by the insurance industry as being of the highest risk in terms of product liability insurance[53]. While there is still some insurance capacity in the market for pharmaceutical product liability, the amount of capacity has fallen, the insurance premiums have risen sharply and cover has gradually been reduced by excluding a growing number of products and substances.

As a result, many of the large pharmaceutical companies prefer to self-insure, either through a captive or by assuming the risk directly on the balance sheet. A key difference relative to the audit sector is that these companies are highly capitalised and, as a result, can sustain much larger claims than audit firms.

In addition, in a few Member States such as Germany and Sweden, there exist national insurance pools for pharmaceutical product liability insurance. These pools are supported by insurance companies active in the country and pharmaceutical companies from the country can buy the compulsory product liability insurance from the pool, but only for the domestic risk. Insurance for foreign risks, i.e. for pharmaceutical product liability in other countries, does still have to be bought from the market place if the company does not wish to self-insure. Thus, for example, a German manufacturer of pharmaceutical products can only obtain insurance from the German pool for the German risk.

Another high risk industry is the energy industry. In this industry, a number of energy companies have created three mutual insurance companies to cover a variety of risks throughout the world:

[52]According to the information available to us, audit firms in all the EU Member States generally can, if they so wish, buy the mandatory liability insurance in the market place.

[53] It should be noted that the product liability regime for pharmaceutical products and energy (see next page) is based on strict liability.

- Oil Insurance Limited provides insurance against damages to property, well control and pollution liability. It has 84 member companies;
- sEnergy provides excess business interruption and excess property insurance. It has 14 members; and
- Oil Casualty Insurance provides excess liability insurance and has 77 members.

This approach differs fundamentally from the pool approach in that a pool approach transfers the risk from the industry to the insurance sector while a mutual approach simply mutualises the risk across the members of the mutual and thus keeps the risk within the industry. It is not obvious that such an approach is a useful model for the audit industry as the mutualisation would be over a very small number of networks. Moreover, the problem of lack of predictability would still be a major issue.

Finally, in terms of catastrophic risk insurance, it is worth noting that some EU Member States, but not all, provide a State guarantee for national terrorism insurance (for example, France, Germany (subject to a cap), Spain, United Kingdom) and natural catastrophe insurance (for example, France and Spain).

While no specific approach or scheme that could serve as a way forward was mentioned by our interlocutors in our discussions with insurance and re-insurance companies and other stakeholders it became clear that essentially four fundamentally different types of alternative risk reduction and transfer solutions could be considered:

1. The first set of solutions essentially overrides the commercial decisions of insurers and forces them legislatively to provide such insurance either on their books, or through a pooling mechanism or the creation of a special vehicle, etc. Such a pool would have to be international in nature, which in itself raises a number of issues. Moreover, such an approach would not eliminate the unpredictability of the likelihood and magnitude of audit liability claims. Any pool or special fund could easily be wiped out by a large claim, which in turns raises the issue of the liability of the commercial insurers to such a pool, fund, etc.;
2. The second set of solutions diversifies directly the risk over a much broader basis such as, for example, making investors pay a special levy on every investment transaction to finance a claims compensation fund or requiring companies to buy audit quality insurance.

   The major drawback of such an approach is that creates a significant moral hazard as the originator of a potential claim, the audit firm, would not have to bear the burden of the cost of the insurance.

   Some have argued that an investor-pay system would be akin to deposit insurance. But, in our view, there is a major difference

between deposit insurance and an investor-pay scheme. The benefits of the deposit insurance accrue to deposit holders and indirectly the latter pay for the insurance through lower returns on their deposits. In contrast, the costs of an investor scheme would be borne by investors but the benefits would accrue in the first instance to audit firms.

A scheme under which the company buys audit quality insurance would be akin to various extended warranty insurance products where the buyer of a good pays the insurance against quality defects. Again, the costs would be shifted from auditors to another party, the companies in this instance.

3. A third set of solutions addresses the unpredictable part of audit liability insurance by shifting the burden to the government, making the latter in essence the insurer of last resort. Various forms of such a scheme can be envisaged. But, fundamentally, the government assumes responsibility for the tranche of any claim exceeding a pre-agreed threshold. Terrorism insurance and nuclear insurance in certain cases are or were provided under schemes of similar form. The taxpayer ends up financing the costs of very large settlements or awards, and the benefits accrue in the first instance to audit firms. Obviously, an element of co-insurance by audit firms can be introduced but fundamentally such a scheme transfers risks from audit firms to taxpayers without any immediate reward for the taxpayer.
4. The fourth set of measures addresses directly the unpredictability of the magnitude of the claims by imposing some form of a limit. As will be shown in Section 26, a limitation on auditor liability may also be more generally beneficial.

None of the approaches discussed above are free of problems.

The first three of the schemes above represent a major government intervention in the market which could potentially be justified by the prevention of a severe impact on capital markets. A full costs benefit analysis would have to be undertaken to determine whether, overall, such approaches yield a net social benefit.

The fourth section also involves a significant intervention in private decision-making as it limits plaintiffs' rights but could perhaps be easier to implement.

Whether any intervention should occur depends really on whether there is a valid public policy case rooted in the protection of capital markets.

19 Summary and key conclusions of Part II

Firms face a range of claim sources. Some claims may originate from the firm's home country. Other claims may originate from abroad, either because the client has a connection (such as a dual listing) linking it to a foreign country, or audit services were provided as part of the audit or group audit of a client domiciled in a foreign country, or because the firm is the group auditor of the domestic firm and, under the recently adopted Audit Directive, bears the full responsibility of the audit of the consolidated accounts.

Moreover, firms belonging to one of the major networks are also exposed to potential reputational damages arising from a claim against an affiliated firm in the network.

In the past, plaintiffs were interested in being able to pursue repeatedly cases against audit firms and therefore did not aim for awards or settlements which would compromise the survival of the firm. However, nowadays, there is a risk that a plaintiff might be solely interested in maximising recoveries without any particular considerations for the sustainability of the firm.

The actual annual costs of the claims, (i.e., the annual costs to the firms and insurance companies of the awards, settlements or reserves against unresolved claims), against EU firms show only a small upward trend. But this cost has fluctuated widely over the last 20 years, reaching in 1991 a peak of almost € 400 million (U.S. $600 million) (at 2005 prices).

Moreover, as already noted, the number of high-value actual or potential claims facing a number of EU firms is high. As of 31st October 2005, there were 28 claims in excess of € 79 million (U.S. $100 million), of which 16 were in excess of € 160 million (U.S. $200 million) and 5 were in excess of € 785 million (U.S. $1 billion).

To manage the liability risks, firms have implemented internal risk management processes. They can also buy low level insurance, typically up to the legal domestic requirements, in the domestic insurance market place. It should be noted that audit firms buy professional indemnity insurance for the whole of their activities and not separately for each line of business.

In response to declining availability of professional indemnity insurance and rapidly rising insurance premiums, the major networks have set up captives which provide some insurance to the member firms of a network. These captives obtain some re-insurance from the single remaining re-insurer with an established program for auditors. Any award or settlement in excess of the cover provided by a captive has to be assumed by the firm directly.

The availability of commercial insurance for high tranches of insurance has fallen sharply to the point that, nowadays, such insurance would cover less than 5% of some of the large claims some firms face nowadays. At the same time, premiums have risen sharply. For example, they doubled over the last 5

years in the case of the captives of the Big-4 while the cover became more limited and restricted.

The main reason for this development is the large losses sustained by the insurance industry in the underwriting of auditor professional insurance in the eighties and nineties. For example, over the period 1981 to 1992, the loss ratio, that is the ratio of the sum of the claims incurred over the period 1982 to 1992 to the sum of the premiums received over the same period, was 266% in the world excluding the U.S. and 305% in the U.S.

Moreover, the lack of risk diversification opportunities and the unpredictability of the occurrence of claims and of their eventual award/settlement quantum make it impossible to develop proper insurance programs for auditor liability.

The reduction in commercial insurance coverage combined with the risk that a case is pursued by a plaintiff interested only in maximising recovery gives rise to the very real possibility that one of the major actual or potential claims will result in a major draw on the firms' resources.

As firms have practically no assets of their own which could be mobilised, the partners of the firm would in such a case bear the cost of the adjustment. At issue is the size of the financial burden that partners would be willing to bear before the firm collapses.

While there exist no precise estimates, discussions with representatives of the Big-4 networks suggest that a 15% to 20% income cut for 3 to 4 years would be bearable. Anything in excess of this range would lead partners to leave in droves with a collapse of the firm very likely soon after.

If one assumes in addition that, as a result of the mega-claim against the firm, some audit business is lost to other firms and overall profitability falls by 10%, the tipping point at which a firm would fail ranges in the case of the four largest firms in the U.K. from €170 million to €365 million depending on the firm in the scenario with a 15% cut in income over three years, and from €255 million to €540 million in the case of a 4-year cut of 20%. This would be the maximum amount (single claim or multiple claims not exceeding that amount) a firm could afford to pay in award or settlement without gravely endangering its survival once the limited insurance coverage through the captive is exhausted. It would not be able to sustain a second claim of such a size in the immediate period following the settlement of the first claim as its resources and those of the captive would need to be rebuilt over a number of years.

While one can question the assumptions underlying these calculations of the tipping point, the fact that U.K. firms face 6 claims or potential claims in excess of €250 million clearly illustrate the risks faced by these firms.

The existence of public oversight bodies is judged by the majority of respondents to the audit firm, company and institutional investor surveys to yield some improvement in audit quality, but no change in audit liability risk and no increase in commercial insurance availability.

A number of alternative risk protection solutions were discussed in this part of the report. These solutions deal with the lack of commercial insurance availability, lack of risk diversification and lack of risk predictability.

The first involves the creation of an international pool.

The second involves shifting the burden of the cost of the insurance to the investor in capital markets or the company buying the audit services.

The third shifts the burden of high awards/settlements to the government;

The fourth and last envisages some form of liability limitation. Part V of this report explores in greater detail how the statutory audit liability of auditors could be limited.

None of the approaches discussed above are free of problems and a full cost benefit analysis would have to be undertaken to determine whether, overall, such approaches yield a net social benefit.

Part III: Likely Short and Long Run Effects of the Possible Disappearance of One or More of the Big-4 Firms

20 Overview

In this part of the report we address the issue of the likely consequences of the disappearance of one of the Big-4 audit firms.

As the data reported in Section 3 show, the market for statutory audit of listed companies is highly concentrated and, in several jurisdictions, this has raised serious concerns[54] about the likely impact on the market for audit services for large companies.

At issue is whether middle-tier firms would be able and willing to take over clients from the Big-4 firm that disappeared.

The issue of the capacity of absorption of the middle-tier firms has become even more critical in this context as a result of the independence rules which prevent audit firms from providing statutory audit services to companies to which they have also recently provided, or are still providing, non-audit services.

In the next section, we report first on the views of audit firms on the likely client migration following the disappearance of one of the Big-4 firms.

We then examine in detail what happened to Arthur Andersen clients following the demise of that firm. Obviously, at the time, there were fewer constraints to a company switching to another Big-4 firm as independence rules were either less constraining or not at all constraining.

Therefore, the observed market adjustment to this shock is not necessarily a good predictor of the likely future market changes if no migration to middle-tier firms was observed in the past.

In contrast, some observed migration to middle-tier firms, even though there were fewer impediments to moving to another Big-4 firm than at the present time, would suggest that some clients could or would be able to switch to a middle-tier firm if required. Obviously, for this to occur, middle-tier firms would have to be willing to take them on as clients.

We also very briefly review the patterns of auditor switching in the Japanese statutory audit market following the recent temporary suspension of ChuoAoyama PwC by the Japanese Financial Services Agency.

Finally, in the concluding section, we also address the likely impact of such an event on companies and capital markets.

[54] Some have argued that such policy concerns could give rise to a "too big to fail" rationale similar to that applied in the past to larger banks.

21 Survey results

In the survey, audit firms and companies were asked to provide their views on the likely migration pattern of the clients of a Big-4 firm which fails.

The responses obtained reveal a significant expectation gap between the Big-4 firms and companies on one side and the middle-tier firms on the other (see Table 58).

For example, almost half of the responses from the Big-4 firms and exactly half of the responses from companies expect companies to migrate exclusively to another one of the remaining Big-3 firms in the immediate aftermath of the disappearance of one of the Big-4 firms. In contrast only 9% of the respondents from the middle-tier firms expect this to be the case.

The views change very little when the projection horizon is extended. In the longer term, the share of respondents expecting clients of a failed Big-4 firm to migrate exclusively to one of the remaining Big-3 firms falls only marginally by a few percentage points. Middle-tier firms are also slightly more optimistic about the longer run outlook regarding the client migration of a failed Big-4 firm.

That being said, the majority view of all respondents is that, both in the short- and the longer run, the clients of a failed Big-4 firm will be mainly or fully picked up by one of the remaining Big-3 firms and that middle-tier firms will gain only a limited number of new clients.

Table 58: Predicted migration pattern of clients of a failed Big-4 firm

Migration pattern	**Short-term prediction (% of total responses)**			**Long-term prediction (% of total responses)**		
	Views of Big-4 firms	Views of middle-tier firms	Views of companies	Views of Big-4 firms	Views of middle-tier firms	Views of companies
Exclusively to remaining Big-3 firms	48	9	51	43	0	47
Mostly to remaining Big-3 firms	52	79	48	57	85	50
Mostly to middle-tier firms	0	12	0	0	15	3
Exclusively to middle-tier firms	0	0	0	0	0	0

Source: London Economics survey of audit firms and companies

Thus, irrespective of the potential problems arising from the independence rules, at the present time, both the suppliers of audit services and the users of audit services expect little market share gain by middle-tier firms following the disappearance of one of the Big-4 firms.

As a result, the market would become even more concentrated than it is now.

The issue of the capacity and willingness of middle-tier firms to step in and pick up clients of a failed Big-4 firm was further explored in the questionnaire to audit firms by asking respondents to assess on a scale of 1 (very unlikely) to 5 (very likely), the probability that middle-tier audit firms would do so.

Again, the survey results reveal an expectation gap. Middle-tier firms are very optimistic and attach a high probability of being able to provide statutory audit services to the clients of a failed Big-4 firm in the longer run while respondents from the Big-4 firms rate this probability as being only average (see Table 59 below). That being said, in the short run, both rate the probability as being much lower.

The views of companies are almost in the middle between those of the Big-4 firms and the middle-tier firms.

Table 59: Assessment of the probability that middle-tier firms would be capable and willing to provide statutory audit services to the clients of a failed Big-4 firm

	In the short term			In the longer run		
	Big-4 firms	Middle-tier firms	Companies Surveyed	Big-4 firms	Middle-tier firms	Companies Surveyed
Assessment of probability on a scale of 1 (very unlikely) to 5 (very likely)	1.7	2.9	2.4	2.5	4.7	3.3

Source: London Economics survey of audit firms and companies

In terms of the seriousness of the impact of the disappearance of a Big-4 firm for higher risk clients, there is a similar difference in appreciation of the impact by the Big-4 firms and the middle-tier firms.

The respondents from the Big-4 firms judge as systematically higher the likelihood that a high-risk client might have problems finding an audit firm following a failure of one of the Big-4 firms in both the short run and the longer term.

While the respondents from the Big-4 firms rate the likelihood as greater than average, it is about average for middle-tier firms in the short run and below average in the longer run (see Table 60).

Overall, however, neither of the two groups judge this to be an extremely likely event,

Table 60: Likely impact of the failure of a Big-4 firm on high risk clients – average EU-wide rating of the likely consequence on a scale of 1 to 5

	In the short term			In the longer run		
	Big-4 firms	Middle-tier firms	Companies Surveyed	Big-4 firms	Middle-tier firms	Companies Surveyed
Clients in higher risk industries will be unable to find a large audit firm willing to undertake the audit	3.5	2.6	2.4	3.1	2.3	2
Clients in higher risk industries will be unable to find any audit firm willing to undertake the audit	2.7	1.9	1.7	2.5	1.8	1.6

Source: London Economics survey of audit firms and companies

To conclude, the survey results suggest that, at the present time, both audit firms and companies are of the view that, in the aftermath of a failure of a Big-4 firm, it is mainly, if not entirely, the remaining Big-3 firms which would provide audit services to the majority of the clients of the failed Big-4 firm.

With regards to the longer run, a broadly similar perspective prevails.

That being said, in both the short and longer run, middle-tier firms paint a more optimistic picture than the Big-4 firms about the likelihood that they will gain clients from the failed Big-4 firm.

Nevertheless, overall, the results of this part of the survey suggest that both audit service users (companies) and providers (Big-4 and middle-tier firms) expect only a limited shift of clients of a failed Big-4 firm to the middle-tier segment.

At issue, however, is whether the world is likely to unfold as expected.

Some observers have questioned whether the remaining Big-3 firms would have the capacity to accommodate the clients of the failed Big-4 firm.

However, as long as the audit personnel of the failed Big-4 firm remains in the sector, that should not be a problem as the sector-wide supply of qualified personnel will remain broadly unchanged. Obviously, the adjustment to the new equilibrium may not be totally smooth as the pattern of staff absorption by the remaining Big-3 firms may not entirely match in the short run that of attempted migration of the clients of the failed firm.

The core issue, therefore, is how audit sector capacity will be affected by such a shock. In commenting on this issue, Big-4 firms pointed out that a disappearance of one of the Big-4 firms related to statutory audit activities could have major disincentive effects on the audit staff of the remaining Big-3 firms as well as, possibly, on the staff of the middle-tier firms. Such staff, including partners, may well decide that the risk of auditing is too high and leave the statutory audit field altogether. The ensuing capacity shrinkage would obviously create problems for all audit clients.

Moreover, in the case of such a shock, middle-tier firms may not be able to put in place the additional insurance coverage commensurate with the increased risk they would face in taking on a number of larger clients. Thus, they may be perhaps more reluctant to enter the market segment vacated by the failed Big-4 firm.

In short, the discussion above suggests that the adjustment to the failure of one of the Big-4 may be more problematic than suggested by the survey results reported in the preceding pages.

A few years ago, the world experienced such a shock with the disappearance of Arthur Andersen and the migration patterns of Arthur Andersen's clients in the U.S. and Europe are examined in the next section to examine whether the key conclusions emerging from the survey results match the actual migration that occurred.

That being said, we acknowledge that the particular Arthur Andersen episode may not necessarily be a good predictor of the market impact of the disappearance of a Big-4 firm.

Moreover, while in the end all of the Arthur Andersen clients found new audit service providers, a number of people informed us that the adjustment was far from smooth, even though there was no or only little loss of overall capacity.

22 Migration patterns of Arthur Andersen clients

Context

Historically, the demise of Arthur Andersen was an event that provides a unique opportunity to analyse on a larger scale the pattern of migration of audit clients of one of the major audit firms to other audit firms.

Obviously, the migration did not occur under normal circumstances and as such the observed migration may not be a reliable predictor of the typical migration pattern under more settled circumstances.

Moreover, the migration occurred under abnormal stressed market conditions as each former Arthur Andersen client had to relatively quickly line up a new auditor.

U.S. findings

The previously mentioned study by the GAO[55] also examined the switching patterns of 1,085 former Arthur Andersen clients in the USA. The study found that:

- Of the 1,085 companies, 87% (938) switched to one of the Big-4 firms. BDO and Grant Thornton attracted together 6% (68) of the switching companies and other audit firms the remainder of the former Arthur Andersen clients (see Table 61 overleaf);
- Of the Big-4 firms, Ernst & Young attracted 26% of the switching clients, KPMG 25%, Deloitte 20% and PwC 15%;
- With a single exception, all very large companies, with assets in excess of US$5 billion switched to one of the Big-4 firms;
- Even among the smaller companies with assets of less than US$100 million, the Big-4 firms attracted 71% of the switching clients in this group.

[55] See GAO (2003).

Table 61: Migration of former Arthur Andersen clients in the USA - by asset size of the clients (U.S.$ m)						
Percentage of companies	**> 5,000**	**5,000-1,000**	**1,000-500**	**500-100**	**500 – 100**	**<100**
Big-4 firm	99	97	96	92	71	87
Other audit firms	1	3	4	8	29	13

Source: GAO (2003)

Migration of former Arthur Andersen clients in Europe

Background

To investigate the switching patterns of former Arthur Andersen clients, we used information from the Amadeus databank.

The latter provides the name of the auditor of a company in each of the following 15 countries: Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Ireland, Latvia, Netherlands, Poland, Portugal, Spain and the United Kingdom.

We also obtained especially from Bureau Van Dijk a list of the former Arthur Andersen clients in these countries. By combining the two information sets we were able to draw up the migration map of former Arthur Andersen clients in each of these 15 Member States, except France where the databank provides often only the name of the signing partners without identifying the audit firms to which they belong.

Overall, we have information on 1,362 companies that were previously audited by Arthur Andersen.

It is important to note that the identification of the migration destination is based on the firm currently listed in Amadeus as the auditor of the company. In practically all cases, this refers to the audit of the 2004 accounts.

Hence, it is possible that a company has switched twice since the demise of Arthur Andersen and the results reported below should be viewed as more reflective of the longer run adjustment than of the immediate market place adjustment.

It is also important to recall that the Amadeus databank covers only non-financial companies. Thus, the picture provided below is somewhat incomplete.

However, in many jurisdictions the auditing of financial intermediaries is subject to special requirements that are only met by the Big-4 firms.

Moreover, the auditing of financial intermediaries is judged by all audit firm networks which we have met, to be a higher risk activity that middle-tier firms are less inclined to take on.

As a result, it is unlikely that a major financial sector client of Arthur Andersen would have migrated to a non Big-4 firm and the results reported below are more likely to underestimate the gains made by the Big-4 firms than to overestimate them.

A final point to note is that the potential supply of statutory audit services was little affected as the Arthur Andersen audit partners were picked up by the Big-4 firms as follows:

- In Austria, Belgium, Denmark, Italy, Portugal, Netherlands, Spain, Sweden and the UK, the former Arthur Andersen audit partners joined Deloitte;
- In the Czech Republic, Estonia, France, Finland, Germany, Greece, Hungary, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Slovakia and Slovenia, the former Arthur Andersen audit partners joined Ernst & Young;
- Finally, in Ireland, the former Arthur Andersen audit partners joined KPMG.

The facts

The migration data reported in Table 61 and Table 62 clearly show that large and very large companies tended predominantly to migrate towards one of the Big-4 firms while smaller companies migrated to a much wider range of audit service providers. For example,

- 93 out of 106 companies with more than €500 million turnover migrated to one of the Big-4 firms while only 61 out of 208 smaller companies with annual turnover of less than €10 million did so;
- The share of clients gained by the Big-4 firms increases more or less continuously with the size of the clients (see Table 63);
- A more detailed country-by-country analysis of the gains of the Big-4 firms shows that, in a number of countries, the Big-4 firms gained all the migrating clients of even a lower size, such as clients with an annual turnover of between €100 million and €500 million (see Table 65).

Table 62: Migration of former Arthur Andersen non-financial sector clients – number of clients migrating by client size

	Turnover of company in 2004, €							
Migration to	**< 10m**	**10-50m**	**50-100m**	**100-500m**	**500m - 1b**	**1-5b**	**> 5b**	**Total**
Deloitte	14	52	33	48	11	8	7	173
Ernst & Young	16	40	33	32	11	6	2	140
KPMG	11	67	30	53	11	6	1	179
PwC	20	69	39	64	18	10	2	222
Sub-Total	***61***	***228***	***135***	***197***	***51***	***30***	***12***	***714***
BDO	8	12	6	9	2	0	0	37
Grant Thornton	8	12	8	5	0	1	0	34
Subtotal	***16***	***24***	***14***	***14***	***2***	***1***	***0***	***71***
Other major middle-tier networks[(1)]	18	57	27	20	3	0	0	124
Other audit firms	113	246	61	51	3	4	0	478
Total	**208**	**555**	**237**	**282**	**59**	**35**	**12**	**1387**

Note: The other middle-tier networks include AGN Int, Baker Tilly Int., BKR Int., CPA Ass. Int., DFK Int., Fiducial Int., Groupe Constantin, HLB Int., Horwarth It., IGAF Worldwide, INPACT Int., Kreston Int., Mazars, MGI, Moore Stephens Int., Moores Rowland Int., MSI Legal & Accounting, Nexia Europe, PKF Int., Polaris Int., Rodl & Partners, RSM Int., Russel Bedford Int., SC Int., UHY Int.
Source: London Economics calculations using Amadeus data

Table 63: Migration of Arthur Andersen clients – share of total migrating clients by client size (%)

Accounting Firm	Turnover of company in 2004, €							
Accounting Firm	**<10m**	**10-50 m**	**50-100m**	**100-500m**	**500m - 1b**	**1-5b**	**>5b**	**Total**
Deloitte	6.7	9.4	13.9	17.0	19.0	22.9	58.3	12.5
Ernst & Young	7.7	7.2	13.9	11.3	19.0	17.1	16.7	10.1
KPMG	5.3	12.1	12.7	18.8	19.0	17.1	8.3	12.9
PwC	9.6	12.4	16.5	22.7	31.0	28.6	16.7	16.0
Sub-total	**29.3**	**41.1**	**57.0**	**69.9**	**87.9**	**85.7**	**100.0**	**51.5**
BDO	3.8	2.2	2.5	3.2	3.4	0.0	0.0	2.7
Grant Thornton	3.8	2.2	3.4	1.8	0.0	2.9	0.0	2.5
Sub-total	**7.7**	**4.3**	**5.9**	**5.0**	**3.4**	**2.9**	**0.0**	**5.1**
Other middle-tier networks	8.6	10.2	11.3	7.1	4.3	0.0	0.0	8.9
Other firms	54.4	44.3	25.9	18.1	4.3	11.4	0.0	34.5

Note: The other middle-tier networks include AGN Int, Baker Tilly Int., BKR Int., CPA Ass. Int., DFK Int., Fiducial Int., Groupe Constantin, HLB Int., Horwarth It., IGAF Worldwide, INPACT Int., Kreston Int., Mazars, MGI, Moore Stephens Int., Moores Rowland Int., MSI Legal & Accounting, Nexia Europe, PKF Int., Polaris Int., Rodl & Partners, RSM Int., Russel Bedford Int., SC Int., UHY Int.
Source: London Economics calculations using Amadeus data

In the table overleaf, additional information on the migration of former Arthur Andersen clients with a turnover of less than €500 million in 2004 is provided. The purpose of this table is to highlight sectors where Big-4 firms gained the bulk of the mandates (more than 70%) even though the companies are small or medium in size.

A number of such sectors stand out. These are forestry, logging and related service activities; fishing; extraction of crude petroleum and natural gas; manufacture of medical, precision and optical instruments, watches and clocks; manufacture of other transport equipment; recycling; financial intermediation; activities auxiliary to financial intermediation; computer and related services; other community, social and personal service activities; and, activities of membership organizations. In some cases, however, the sample includes only 1 or a small number of clients and, therefore, it is not possible to draw very strong conclusions for these particular sectors.

Table 64: Migration of former Arthur Andersen clients with turnover of less than €500 million- number of clients migrating by sector of activity

Sector of Activity	Number of firms	Share of firms migrating to Big-4	Share of firms migrating to non-Big-4
Agriculture, Hunting and related activities	1	-	100%
Farming of animals	4	-	100%
Growing of crops	1	-	100%
Agriculture, Hunting and related activities	2	50%	50%
Forestry, logging and related service activities	1	100%	-
Fishing	1	100%	-
Extraction of crude petroleum and natural gas	5	100%	-
Other mining and quarrying	6	50%	50%
Manufacturing of food products, beverages and tobacco	58	38%	62%
Manufacture of textiles	15	47%	53%
Manufacture of wearing apparel: dressing and dyeing of fur	5	40%	60%
Manufacture of leather and leather products	7	43%	57%
Manufacture of wood and wood products	19	42%	58%
Manufacture of pulp, paper and paper products: publishing and printing	4	75%	25%
Publishing, printing and reproduction of recorded media	33	64%	36%
Manufacture of coke, refined petroleum products and nuclear fuel	2	50%	50%
Manufacture of chemicals, chemicals products and man-made fibre	36	61%	39%
Manufacture of rubber and plastic products	18	50%	50%
Manufacture of other non-metallic mineral products	27	59%	41%
Manufacture of basic metals and fabricated metal products	16	44%	56%
Manufacture of fabricated metal products, except machinery and equipment	34	47%	53%
Manufacture of machinery and equipment n.e.c.	33	48%	52%
Manufacture of office machinery and computers	5	60%	40%
Manufacture of electric machinery and apparatus	10	60%	40%
Manufacture of radio, television and communication equipment and apparatus	11	64%	36%
Manufacture of medical, precision and optical instruments, watches and clocks	14	86%	14%

Table 64: Migration of former Arthur Andersen clients with turnover of less than €500 million- number of clients migrating by sector of activity

Sector of Activity	Number of firms	Share of firms migrating to Big-4	Share of firms migrating to non-Big-4
Manufacture of transport equipment	10	60%	40%
Manufacture of other transport equipment	12	83%	17%
Manufacturing n.e.c.	16	56%	44%
Recycling	5	80%	20%
Electricity, gas and water supply	13	69%	31%
Collection, purification and distribution of water	3	33%	67%
Construction	93	32%	68%
Sale, maintenance and repair of motor vehicles and motorcycles: retail sale of automotive fuel	64	33%	67%
Whole sale trade and commission trade, except motor vehicles and motorcycles	201	39%	61%
Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	46	35%	65%
Hotels and restaurants	17	53%	47%
Land transport; transport viva pipelines	13	62%	38%
Water transport	9	56%	44%
Air transport	6	50%	50%
Supporting and auxiliary transport activities; activities of travel agencies	32	44%	56%
Post and telecommunications	10	90%	10%
Financial intermediation	46	70%	30%
Insurance and pension funding, except compulsory social security	2	50%	50%
Activities auxiliary to financial intermediation	10	70%	30%
Real estate activities	51	41%	59%
Renting of machinery and equipment without operator and of personal and household goods	13	46%	54%
Computer and related services	39	72%	28%
Research and development	4	50%	50%
Other business activities	117	57%	43%
Public administration and defence	3	33%	67%
Education	3	33%	67%
Health and social work	14	64%	36%
Other community, social and personal service activities	7	71%	29%
Activities of membership organizations	1	100%	-

Table 64: Migration of former Arthur Andersen clients with turnover of less than €500 million- number of clients migrating by sector of activity

Sector of Activity	Number of firms	Share of firms migrating to Big-4	Share of firms migrating to non-Big-4
Recreational, cultural and sporting activities	32	44%	56%
Other services activities	8	38%	63%
Unclassifiable firms	14	21%	79%
Total	**1282**	**49%**	**51%**

Note: Only companies with 2004 turnover of less than €500 million in Table 63. The classification of the sector of activity is based on NACE

Source: LE calculations using Amadeus data

Table 65: Migration of Arthur Andersen clients – share of migrating clients gained by Big-4 firms by client size and EU Member State (%)

		Turnover of company in 2004, €			
Country		**100-500m**	**500m - 1b**	**1-5b**	**> 5b**
BE	Share of Big-4 firms	32	100	67	-
	Share of "incumbent"(1) among Big-4 firms	50	33	100	-
DK	Share of Big-4 firms	84	100	100	100
	Share of "incumbent" among Big-4 firms	0	50	0	0
EL	Share of Big-4 firms	40	100	-	-
	Share of "incumbent" among Big-4 firms	0	0	-	-
ES	Share of Big-4 firms	66	92	100	100
	Share of "incumbent" among Big-4 firms	44	9	33	100
IE	Share of Big-4 firms	100	100	-	-
	Share of "incumbent" among Big-4 firms	0	0	-	-
LV	Share of Big-4 firms	100	-	-	-
	Share of "incumbent" among Big-4 firms	0	-	-	-
NL	Share of Big-4 firms	79	100	75	100
	Share of "incumbent" among Big-4 firms	16	11	33	0
PL	Share of Big-4 firms	50	100	50	-
	Share of "incumbent" among Big-4 firms	13	11	33	-
FI	Share of Big-4 firms	100	100	-	-
	Share of "incumbent" among Big-4 firms	11	0	-	-
UK	Share of Big-4 firms	77	83	94	100
	Share of "incumbent" among Big-4 firms	27	30	13	40

Note: the "incumbent" firm is the firm to which the auditing partners of Arthur Andersen migrated. The share of the incumbent firm is the ratio of new clients gained by the firm to the total number of clients gained by the Big-4 firms.
Source: London Economics

23 Auditor switching in the Japanese audit market

In May 2006, the Japanese Financial Services Agency (FSA) announced that ChuoAoyama PwC was being suspended from providing a number of audit services for a two months-period, from 1st July 2006 to 31st August 2006.

According to the FSA, this disciplinary action was taken because some engagement partners of the firm had falsified the accounts of the Japanese company Kanebo. These engagement partners were also personally disciplined through a revocation of their professional auditor status or a temporary suspension.[56]

According to Japanese law, companies which lose their auditor are required to appoint as soon as possible replacement auditors, either on a temporary or permanent basis.

Following the announcement of the suspension of ChuoAyoama PwC, a new firm PwC Arata was set up by PwC and began operations on the same day as ChuoAyoama halted its operations.

Despite its two-month suspension, the firm lost relatively few clients. Indeed, according to a recent survey of 802 listed companies conducted by Nikkei News[57], Chuoyama lost only 33% of its clients. Moreover, about 25% of the clients having left Chuoyama appointed Arata as the new auditor.

One cannot draw from this particular event any strong conclusions about the likely impact of the disappearance of one of the Big-4 as the circumstances are very different. But, it provides some further evidence about sluggish auditor switching.

[56] Excluded from the suspension were audit services required under foreign legislation. In addition, the FSA partially or fully excluded from the suspension statutory audit services to be provided to companies which are required to submit their annual report by end July or end August or to companies with an accounting year ending in May.

[57] The survey was published on 6th September 2006.

24 Potential consequences of the disappearance of one or several Big-4 networks

The analysis of the survey results and the review of the actual migration patterns of the former clients of Arthur Andersen suggest that, under the present circumstances, middle-tier firms are unlikely to become a major substitute for one of the Big-4 firms if one of these Big-4 firms were to disappear.

Middle-tier firms would in all likelihood gain some new large company audit mandates from the client base of the failed Big-4 firm.

But, the bulk of the large companies would still aim to keep their audit within the now Big-3 firms.

A similar point of view was expressed in discussions with some middle-tier firms. According to their representatives, not all middle-tier firms would have the scale and resources necessary to provide the required audit services to large public companies and some may be reluctant to undertake the necessary investments if in all likelihood they would gain only a few large client mandates. Moreover, some middle-tier firms noted in face-to-face meetings that the risk of providing audit services to such large public companies is too high in light of their financial resources and the available liability insurance.

A failure of one of the Big-4 networks may result in a significant reduction in large company statutory audit capacity if partners and other senior staff at the failed firm, the remaining Big-3 firms, and possibly even some middle-tier firms, were to decide that auditing is a too risky activity and therefore shift to other business lines. This would obviously create very serious problems for companies whose financial statements need to be audited.

In such circumstances, a major increase in the price of statutory audits would be required to restore the equilibrium between demand for and supply of statutory audit services.

Obviously, the adjustment to the market structure could be stressful and challenging and, during the transition phase to the new equilibrium, the completion of statutory audits may be delayed as clients may have to queue for the services of the remaining audit firms.

Depending on which network were to disappear, financial institutions in particular could face very serious transition problems as the special skills, knowledge and cross-border reach their audits require may severely restrict their range of choice for a new auditor. This limitation of choice is likely to be exacerbated by the independence rule which may further restrict the range of potential replacement auditors.

As noted in Section 4, the major financial institutions in the EU are almost exclusively audited by Big-4 firms and, in a number of countries, two Big-4 firms dominate the market for statutory audits of financial institutions. In contrast, across the EU, the Big-4 firms audit only about 2/3 of the non-financial companies listed on regulated stock markets.

The capitalisation of financial institutions has grown considerably in recent years and so has their cross-border reach, especially that of the larger financial institutions. For example, over the 5-year period of 1st October 2001 to 29th September 2006, the market capitalisation of the 33 financial institutions in the FTSE Eurofirst 100 (a stock market index regrouping the 100 largest European companies) increased on average by 41% while the capitalisation of the non-financial companies included in the same index increased on average by 24% over the same period.

Middle-tier networks may find it difficult, if not impossible, to substitute for the failed Big-4 network due to the high liability risk and lack of required expertise.

There could also be an impact on capital markets, especially during the transition phase. If the disappearance occurs close to the end of the financial year,, investors may have to wait longer for the release of audited accounts. They may be also less familiar with the new auditor. Whether this would lead to significant perturbations in capital markets is an open question.

The cost of capital is unlikely to be impacted much directly even if audit fees increase sharply as the share of audit fees in total operating costs is typically very small. Even a doubling or a trebling of audit fees is unlikely to have much affect on the profitability of companies, except those whose profitability was borderline.

But, the cost of capital could be affected indirectly if the loss of one of the Big-4 was to make investors lose confidence more generally in capital markets. While such an impact could be potentially very substantial, it is impossible to quantify it precisely as the magnitude of the impact will ultimately depend on the perceptions and mood of the investors at the time the failure occurs. If such a shock were to occur in already unsettled markets the impact could be much larger than in normal market conditions.

Underlying the discussion so far of the consequences of the disappearance of one of the major Big-4 firm is the assumption that the surviving Big-3 firms and middle-tier firms would have access to the additional financing necessary to fund the expansion of their audit activities. If this additional financing was not forthcoming, from external or internal sources, then the whole audit market adjustment process would become much more difficult.

So far, the discussion focused on the disappearance of a single Big-4 network. Given the limited availability of insurance and the large actual and potential claims faced by a number of Big-4 firms, it cannot be ruled out that a second network would fail too relatively soon after the first network failed.

Such a situation would obviously be dire and any market adjustment would be rendered much more problematic.

First of all, investors' confidence may be seriously shaken by such an event as it is likely to raise many questions about the value of audits and the audit profession, and capital markets will most probably react much more negatively than in the case discussed above. Investors' trust in audited accounts of companies will likely be severely undermined by such events and the costs of capital will likely rise as a result.

There is also a considerably higher likelihood that a number of experienced audit staff and partners will leave the audit activity. As companies whose auditors have failed will need to find new auditors in a context of shrinking supply, the market for statutory audits will likely be very seriously perturbed and many audits are unlikely be completed in a timely fashion. This is particularly likely to be the case for companies whose statutory audits require special skills and expertise.

The price of statutory audits will in most likelihood increase, and this not only temporarily, as the surviving firms are likely to price a higher risk in their audit fees.

The disappearance of one or two Big-4 networks may also seriously erode the reputation of the surviving Big-2 networks more generally. It is not clear, however, whether this would benefit middle-tier firms.

It all depends on whether the loss of reputation and confidence affects only the surviving Big-4 firms or whether there are spill-over effects to the middle-tier segment. In the former case, middle-tier firms could benefit as a barrier to entry would be reduced while in the latter case, the relative ranking, in terms of reputation, of the surviving Big-2 firms and the middle-tier firms may not change much with both groups suffering a loss in reputation. Perversely, a flight to safety and perceptions about audit quality could even make it more difficult for some middle-tier firms.

Part IV: Economic Impact of Alternative Auditor Liability Regimes

25 Introduction

In this part of the report, we examine whether differences in auditor liability regimes have any impact on a series of dimensions of the audit and capital markets.

Before undertaking the empirical analysis, we examine what economic theory tells us about incentives under various auditor liability regimes and examine the impact of other factors such as the existence of public oversight and enforcement bodies on audit quality

Next, we provide a quick summary of the current legal regimes with regards to auditor liabilities in Europe. The information presented in that section will be used in the empirical analysis discussed in the subsequent sections.

The empirical analysis reviews the impact of differences in auditor liability regimes on:

- Audit quality;
- Legal claims and payouts;
- Audit fees;
- The structure of the audit market;
- Capital markets;
- The audit firms' human resources.

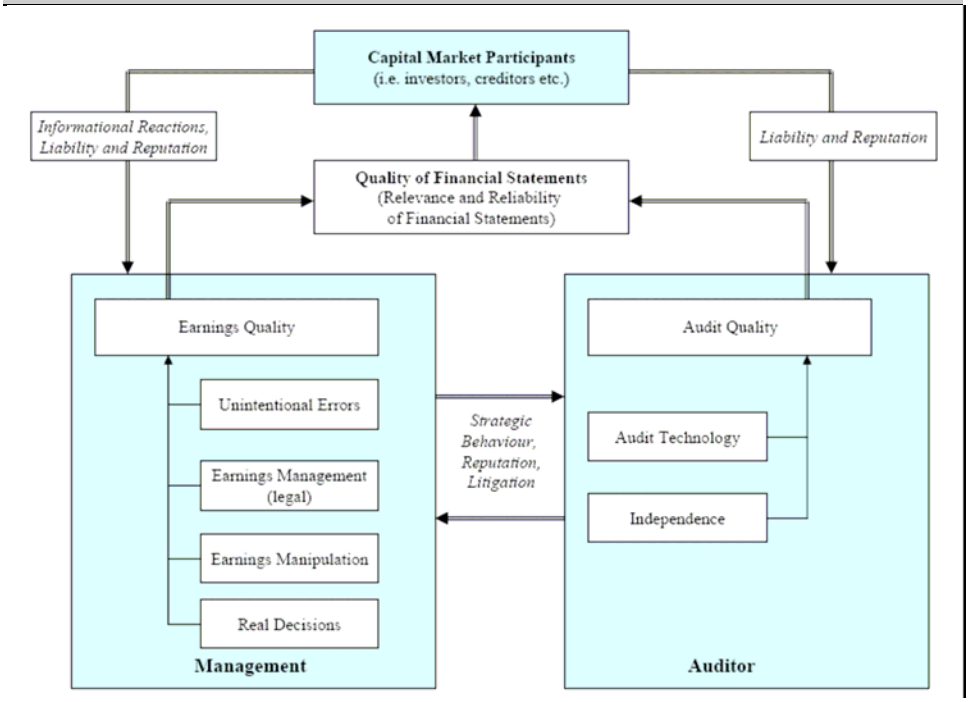
Finally, a final section presents a number of conclusions related to the issues addressed in this part of the report.

26 Economic impact of different auditor liability regimes on incentives – what does theory tell us?

26.1 The general perspective[58]

Our conceptual assessment of the economic effects of auditor liability rules is based on a comprehensive market framework (as shown in Figure 7) and focuses on various interdependencies between auditors, managers and the participants in the capital market (such as investors and creditors).

Figure 7: Auditor liability and relationships between main parties



Source: Ewert

[58] This section of the report was contributed by Professor Ralf Ewert. A more extensive discussion of the issues addressed in this section is provided at Annex 6.

The consequences of auditor liability arise by influencing the decisions and actions of the parties shown in Figure 7.

With respect to decision making, we view all the actors as rationally behaving individuals who make financially optimal decisions in the context of their conjectures about the optimal behaviour of their market counterparts – this also involves opportunistic behaviour should it turn out to be optimal for the respective actor.

To illustrate, in choosing his audit effort the auditor is assumed to minimize total audit costs (given the audit fee) which are defined as the sum of the direct audit costs and the expected payments resulting from an auditor liability system (this concentrates on the liability effects; there might also exist reputational effects, which will be discussed separately below). In assessing the expected damage payments, the auditor first makes conjectures about the basic earnings quality which depends on the manager's accounting policy (which in turn depends on the manager's conjectures of the audit effort).

In addition, the auditor faces a potential threat of losses from the prevailing system of auditor liability, but the actual intensity of this threat depends on the suing behaviour of market participants which depends on the liability rules and the market's conjectures about the auditor's and the manager's optimal actions.

It becomes obvious that a liability regime for auditors unfolds its effects by its impact on the optimal actions of all parties that are intertwined in a complex and subtle net of interdependencies (see the appendix for detailed descriptions of these issues).

Consistent with this market network view, the ultimate goal of a liability system for auditors is to "efficiently" increase the quality of the financial statements by improving their relevance and reliability. The term "efficiently" points to the fact that increasing the quality of the financial statements is not advantageous at any price. As far as the approaches to be described below present a final evaluation of an auditor liability system from a "social" viewpoint, they explicitly or implicitly employ a perspective of social welfare (which is similar to the one often used in the literature on law and economics). Social welfare is derived from the utility of the individuals or parties involved by essentially summing up the individual utilities. To illustrate, consider a simple example with a company's owners and its auditor as the relevant parties. Suppose the utility of the company's shareholders is measured by the present value of the net cash flows accruing to them from the company's investments (here, the audit fees are also included as expenses) and any expected damage payments to be received from the auditor, and the auditor's utility is measured by his audit fees net of the direct audit costs and the expected liability payments. It then follows that social welfare equals the sum of these two utilities, implying that the audit fees and the expected liability payments eventually cancel out (since they enter the calculation both as negative and positive terms). Thus, what remains is the company's present value net of the direct audit costs. The

"socially optimal" audit level would then maximize this expression of social welfare. In the context of the above example, the benefits of higher quality audits derive from better investment decisions by the company's owners due to the improved information about the company's prospects, and the costs of the audit equal the direct audit costs.

Following this view, increasing the information content by inducing higher audit efforts increases social welfare only if the resulting basic benefits (due to improved investment and portfolio decisions in the economy) outweigh the additional costs. Among these costs are first the direct costs of delivering the required audit efforts. Furthermore, liability-induced increases in audit efforts eventually operate by means of the legal system, implying that legal costs arise. And finally, the damage payments that investors recover after successfully suing the auditor cancel out in a market scenario since investors will have to pay ex-ante for the "insurance" they receive from the auditor through higher audit fees (which will additionally be adjusted for legal costs that have to be incurred by auditors due to the specific liability system). Hence, the willingness of investors to pay for ex-post recoveries of damages and expected legal costs ultimately depends on the basic cost-benefit-trade-off mentioned above.

Under this general framework, our review concentrates on the economic effects of structural parameters that are relevant for designing an auditor liability regime:

- Strict liability versus negligence;
- Joint and several liability versus proportionate liability;
- Extent of auditor liability (size, caps, etc.);
- Effects of liability insurance for auditors;
- Effects of complementary factors other than liability that may have an impact for the behaviour of the auditor (e.g., reputation, oversight mechanisms etc.).

The next sub-section concisely presents the central results concerning these issues that can be found in the conceptual literature on the economics of auditor liability systems. For details and all references, the reader is referred to the appendix.

The objective of this discussion is to inform about the basic effects and consequences that may arise if the structural parameters of a liability system for auditors are set in a certain way. Hence, to obtain a comprehensive picture of the various possible consequences, one has to basically allow for all options of the structural parameters (even if some alternatives are currently not representative of existing liability systems in the EU). Moreover, the potential merit of having a certain system can only be assessed in light of possible alternatives.

26.2 Results of the conceptual audit research

26.2.1 Strict Liability versus Negligence

Under strict liability (SL), an auditor is always liable if the financial statements contain errors.

Under negligence liability (NL), he is liable only if there are errors and if he has not delivered a level of "due care". NL provides a kind of "built-in" insurance for the auditor since there is no danger of any liability losses if he has delivered the audit effort required by the due care-standards. Thus, at first glance it seems possible under NL to induce any desired audit effort by simply setting an appropriate due care-standard, assuming that the auditor will realize the required effort by his desire to avoid damage payments.

However, there are two objections to this argument. The first is due to the fact that a NL regime needs some uncertainty regarding the realized audit effort in order to provide a credible threat. To see this, observe that if investors were sure that the auditor has realised the due care-standard, nobody would sue the auditor (since each case would be lost by investors). But then, there would be no threat from the liability system, and the auditor would have no incentive to realize the due care-standard. In order for the liability threat to exist, there must be some positive probability of a substandard audit in equilibrium.

The second aspect concerns the virtually unavoidable vagueness of audit standards in reality. Each audit largely involves professional judgment in almost all stages of the audit process, and no system of audit standards can define in advance the appropriate procedure for every instance and by this means relieve the auditor from any contextual decisions. It eventually depends on the court's judgment in an actual trial whether a given audit effort is viewed as negligent, and neither the auditor nor investors know for sure the negligence status of a certain audit activity in advance. Hence, audit standards are typically not precise enough to provide clear and unambiguous guidance to a specific audit level.

But what may seem to be problematical at first glance turns out to be an advantage from incentive considerations. Increasing the audit effort under vague NL provides two advantages for the auditor: firstly it increases the probability that errors are detected which leads to a reduction of the expected damage payments; secondly it decreases the probability that the audit effort is viewed as negligent in a trial. Under SL, only the first effect is present, and this enables a regime of vague NL to basically outperform SL with respect to incentives for delivering high audit efforts.

The final evaluation of NL vs. SL depends on the cost-benefit tradeoffs mentioned in the introduction, and this trade-off may lead to different conclusions depending on which aspects are taken into account.

It can be shown that vague NL has advantages over SL if legal costs are proportional to the size of the damage payments. Compared to SL, the presence of the second incentive effect under vague NL enables a lower level of damage payments to induce a given audit effort which saves legal costs. On the other hand, if the option of settlements is additionally considered, a regime of SL can basically be designed in such a way as to avoid legal costs completely (since auditors and investors would always prefer to settle), while the vague NL regime is prone to informational asymmetries with respect to the audit effort and still induces some legal costs.

However, notice that both arguments eventually employ a kind of "social planner"-view that is somewhat problematic since no real regulator will have the knowledge that is required for the proper implementation of the proposed solutions. Furthermore, a change from vague NL (which represents most regimes in reality) to SL would leave open the role for professional standards, which is hardly conceivable.

26.2.2 Joint and Several Liability versus Proportional Liability

Under a strict proportional liability rule (PL), the courts determine the percentage by which they hold the auditor responsible for errors, and the auditor has to compensate plaintiffs by damage payments that equal the product of the damages and the percentage of responsibility. Under joint and several liability (JSL), the basic responsibility of the auditor is similar to PL, but should the company and/or the manager (as the co-defendant) be insolvent, then the auditor has to pay the full damages. Hence, the systems differ in the case of bankrupt companies and/or managers.

If only the strategic interdependencies between auditors and investors are considered, it turns out that PL provides less incentive for investors to sue the auditor, which leads to lower audit efforts in equilibrium due to the reduced threat from the liability system. The ultimate evaluation of this effect depends on the general cost-benefit-trade-off, and the resulting decrease in audit efforts caused by a (ceteris paribus) move from JSL to PL may be beneficial or not depending on the specific market context.

A somewhat different picture emerges if strategic interdependencies between managers and auditors are considered. First observe that under PL, the percentage apportioned to the auditor determines the incentives for the manager to manipulate earnings. The higher (lower) the auditor's percentage of responsibility, the larger (smaller) the incentives for the manager to misrepresent the company's financial situation (since he has to bear the complementary percentage of the damages). Thus, given a relatively low percentage of responsibility for the auditor, he faces a relatively small threat of expected liability losses which reduces his incentives to exert high audit efforts, but this need not be problematical because there is less earnings

management in the first place. Unexpected effects may arise if one moves from PL to JSL (given a certain distribution of percentages).[59] Under JSL, the auditor now faces a larger liability threat and extends his audit efforts. This improves not only the expected recoveries of damages accruing to investors but also the information of the market, and the immediate effect is an increase in market prices (due to the larger expected damage payments that investors receive) and the sensitivity of the market price with respect to earnings. However, this may be just the start of a chain of effects, since the increased price sensitivity provides incentives for the manager to increase his earnings management, and it turns out that (depending on the market parameters) it may be the case that the net effect of these countervailing actions could in fact be negative for the resulting quality of the financial statements (see Annex 6 for a discussion of some empirical results on the JSL-vs.-PL issue).

26.2.3 Extent of auditor liability (caps etc.)

In principle, by increasing the extent of the auditors' liability it is possible to induce large levels of audit effort, since these efforts are typically strictly increasing in the size of the expected liability losses. However, recall from the general perspective as shown in Section 26.1 that, in a market context, investors will eventually pay ex-ante for an ex-post "comfortable" position that is provided by a liability system since auditors will include the expected damage payments into their audit fees.

Hence, in some sense the expected liability payments and the respective part of the audit fee cancel out in a market context. In fact, the extent of auditor liability has to be chosen with deliberation by considering the incentives for audit efforts, the related audit and expected legal costs and the resulting gross benefits from improved information in the capital market.

Hence, the existence of situations where the economic costs of unlimited liability exceed the benefits should come as no surprise (the potential problems shown in the previous section concerning a move from PL to JSL may also be seen as an example of detrimental effects that may arise by increasing the liability for auditors).

26.2.4 Liability Insurance

Introducing liability insurance for auditors may be seen as a double-edged tool: on the one hand, insurance has beneficial effects since the auditor no longer has to bear risk that is otherwise undiversifiable. This would also be favourable for investors because the audit fees would not have to include a risk premium to compensate the risk-averse auditor for his burden of risk bearing. On the other hand, as is known from the insurance literature, insurance may basically induce moral hazard effects, and this may give rise to

[59] See the appendix for a more detailed discussion of these effects.

the possibility of a reduction of the auditor's incentives to deliver an appropriate audit effort.

It can be shown that – at least in principle – there exist insurance contracts, which provide benefits of risk reduction without running into additional moral hazard problems. To illustrate, assume a negligence system (NL) with precise audit standards. As shown above, this system cannot guarantee that the due care standard is always realized in equilibrium since there has to be some uncertainty with respect to the audit effort to provide an incentive for investors to sue.

Now change this system to strict liability (SL) and introduce insurance contracts with obligations that are equal to the due care standard under precise NL. Then, investors would always sue in the case of remaining errors in the financial statements (since under SL, the success of this action no longer depends on the realized audit effort), but the (insured) auditor would get relief from paying damages if and only if he has delivered due care. Thus, the auditor´s burden is restricted to the insurance premium which is ex ante based on the expected damage payments under due care.

The obvious difficulty with such contracts is that their implementation would require a rather radical change of the entire liability system from NL to SL. Furthermore, the solution for the *precise* NL-system is not applicable to the *vague* NL-type which seems to better represent most real liability systems. Under vague NL, no change of the liability regime is necessary, but in order to curb any insurance-induced moral hazard effects, the obligations included in the insurance contracts have to be based on the equilibrium audit effort that would result under vague NL without insurance. In this context, the implementability of the insurance contracts is difficult for other reasons, because one now has to speculate about an otherwise occurring market outcome.

26.2.5 Complementary factors

In addition to a specific liability regime, there are additional factors, which contribute to the provision of incentives to supply high audit quality.

An important factor is reputation, which may have become even more relevant and visible after the collapse of Enron and the resulting withdrawal of Andersen from the audit market (and there are statements from audit representatives that the incentives resulting from building up and preserving reputation may even be more important for audit quality than threats due to litigation).

Additional supplementary effects may be provided through a public oversight system for the audit industry (see Section 27 for a specific discussion of these issues). The effects resulting from a certain liability regime should always be assessed in the context of factors that also work in

similar directions. This eventually strengthens the statement that one can envisage situations where liability is "too high".

27 Consequences of regulatory actions other than liability on audit quality

27.1 Introduction[60]

This report concentrates mainly on a comprehensive empirical and theoretical assessment of possible economic effects of auditor liability systems, but the design of a liability system is clearly not the only factor by which regulators attempt to improve audit quality and the information content of financial statements. Hence, it seems helpful to provide some links between the liability effects presented in the previous section and other regulatory actions that are on the current agenda in the EU.

This agenda is best represented by the EU-directive 2006/43/EC on statutory audits of annual accounts and consolidated accounts of 17 May 2006. This directive contains provisions on various aspects, starting with the approval and educational requirements for statutory auditors, issues of professional ethics and independence up to aspects of quality assurance and the supervision of the audit industry.[61]

In the following discussion we concentrate on those parts of the directive that essentially follow analogous provisions of the Sarbanes-Oxley-Act (SOX) of 2002 and at the same time represent the most visible international regulatory consequences of the Enron and Worldcom scandals:

- In Article 32 ff., the directive requires Member States to install an independent public oversight system for statutory auditors and audit firms with far-reaching competences for the respective authorities (this parallels the introduction of the "Public Company Accounting Oversight Board" (PCAOB) created by the Title I-section of the SOX).

In addition to this aspect, we also discuss the issue of "rules vs. principles-based standards" with respect to possible consequences for the efficacy of an auditor liability system.

[60] This section of the report was contributed by Professor Ralf Ewert.

[61] Big-4 audit firms are of the view that the most important drivers of audit quality are regulation and professional pride of both the individual auditors and the audit firm. The sanctions open to the regulators (up to and including the loss of a firm's licence) combined with the reputational damage and the consequential impact on the ability of the firm to function are viewed by the Big-4 firms as far more powerful incentives to deliver audit quality than the threat of litigation.

27.2 Effects of the intended system of public oversight

The intention of Article 32 of the directive is to install an oversight system that essentially works independently from the audit industry. Hence, it shall in principle be governed by "knowledgeable non-practitioners" and is equipped with extensive competences, in particular with the ultimate responsibility over professional standards on ethics, quality control and auditing as well as the right to design investigative and disciplinary systems (including the possible conduct of investigative actions).

Some EU Member States have already introduced such systems and the respective oversight bodies (e.g., the "Abschlussprüferaufsichtskommission" (APAK) in Germany, the "Financial Reporting Council" (FRC) in UK, the "Haut Conseil du Commissariat aux Comptes" (H3C) in France, the "Irish Auditing & Accounting Supervisory Authority" (IAASA) in Ireland), and in December 2005 the European Commission has already set up the "European Group of Auditors´ Oversight Bodies" (EGAOB) to coordinate and harmonise the supervisory activities of the member states.

The term "oversight system" should not be confined to pure supervisory bodies in a narrow sense but extended to also include bodies that are responsible for the enforcement of accounting and auditing standards. In this respect, the specific design of the supervisory system can differ from country to country.

This can be illustrated by comparing, e.g., the oversight systems of the USA and Germany.

The PCAOB in the USA represents a single body which acts as a supervisor of the auditing profession as well as an enforcement agency (because it has the right to initiate inspections, to impose sanctions etc.); the PCAOB is itself overseen by the SEC.

In Germany, the supervisory and enforcement activities are split up between several bodies. The WPK ("Wirtschaftsprüferkammer" (Chamber of Public Accountants)) is primarily responsible for the supervision of the accounting profession, but it is a body of professional self-administration and is overseen by the independent APAK. On the other hand, enforcement activities are performed by the DPR ("Deutsche Prüfstelle für Rechnungslegung" (Financial Reporting Enforcement Panel)) in cooperation with the BaFin ("Bundesanstalt für Finanzdienstleistungsaufsicht"). The DPR may launch investigations of the latest financial statements of firms according to specific circumstantial evidence and/or by a sampling procedure. The aim is to guarantee that the accounting procedures conform to the relevant accounting standards, and the results of such inspections may also reveal audit failures. The DPR reports its findings to the BaFin, and if the inspection has uncovered any evidence for potential audit malpractice, this is reported to the WPK.

Whatever the specific design of such oversight system, in connection with the economic effects discussed in the previous section it is useful to condense its function in a somewhat "technical" sense: The oversight bodies essentially act as an independent source of information that may inform the market about the characteristics of a particular audit. To illustrate, the oversight body may initiate an investigation of financial statements and/or a statutory audit that raises doubts whether an audit has been conducted with due care. Such investigation may then reveal the true quality of the audit and/or the extent of remaining errors in the financial statements.

To assess the potential effects of this procedure, consider the "mechanics" by which an auditor liability system is supposed to work: the threat from liability arises because remaining errors in the financial statements possibly become known to the market, then investors may decide to sue the auditor, the actual audit effort is perhaps revealed during the subsequent trial such that damage payments can be imposed on the auditor, who – in anticipation of this chain of effects – chooses to deliver an appropriate audit effort in the first place.

Notice that the starting point of this chain is that the market somehow gets some evidence of possible errors in the financial statements. Hence, a first effect of the oversight system is a supportive one: It facilitates the operation of the market within a liability system by increasing the probability that remaining errors and/or audit malpractice become known such that the subsequent cascade of steps required to impose damage payments can be started. This intensifies the threat from the liability system and should lead to an increase in audit quality.[62]

Furthermore, a truly independent oversight body should ideally act as a "non-strategic" player. Hence, any investigative actions should be triggered by random sampling and/or specific evidence, but not by conjectures about the auditor´s behaviour and cost-benefit-tradeoffs based on such conjectures. This characterizes the actions of investors who have to decide about suing the auditor, and such behaviour causes the strategic interdependencies discussed in the previous section. However, these cost-benefit-tradeoffs of investors may be influenced by the results of the investigations that are conducted by oversight bodies. If such investigation reveals that there is a large probability that an auditor has not delivered due care, then suing the auditor is more profitable for investors (*ceteris paribus*) and will be chosen more frequently. This implies that the probability for the auditor of having to pay damages increases which provides additional incentives to conduct an appropriate audit.

[62] Interestingly, this hypothesis is confirmed by results of the London Economics survey of audit firms, companies and institutional investors. As was shown shown in the insurance part of this report, the majority of respondents expect a positive impact of an independent public auditor oversight body on audit quality.

Moreover, the investigative actions of oversight bodies can be seen as an additional incentive device which operates independently from a liability system.

Suppose there were no third-party liability for auditors, then (apart from possible reputational concerns) potential disadvantages for not delivering due care would still be present due to the probability that the oversight body investigates the audit under consideration and possibly imposes sanctions on the auditor (e.g., withdrawal of approval to act as a statutory auditor etc.). Hence, in this respect the investigative actions can be seen as complementary factors as described in section 26.2.5, and they even complement and facilitate the incentive effects resulting from reputational concerns.

The subtle point in analysing reputation is the mechanism by which reputation can be built up and destroyed in a certain market. This is especially difficult in audit markets since only malpractice is observable with a small probability, but there is no explicit confirmation that a certain audit has been adequately executed. This may change due to the results of investigations conducted by oversight bodies. Suppose a certain audit has been investigated. Should the result be negative, then the effects discussed above arise and the auditor will additionally loose reputational capital. Should the result be positive, then investors can more reliably update their expectations about the quality of the auditor whose reputational capital now increases. This facilitates the market's operation in setting reputational incentives for auditors and provides some relief for the liability system.

However, notice that all these effects are not costless. If we also employ a perspective of social welfare vis-à-vis the public oversight system, there is a trade-off between the possible positive effects presented above and the costs of operating this system. Among these costs are also "indirect" costs that stem from the fact that the new oversight bodies might feel a permanent need to justify their existence. This may result in an extension of regulation (e.g., regarding auditing standards etc.) that develops a momentum of its own, and since the members of the respective bodies are supposed to be non-practitioners, the question arises of whether these persons will always take into account the necessary cost-benefit tradeoffs that are specific to auditing (similar reservations vis-à-vis the PCAOB have been advanced recently by Kinney (2005)). At the current stage one can only speculate about the magnitude of direct and indirect costs of the new oversight system, but one should be aware of the existence of such costs and review the efficacy and efficiency of the new system after a certain period of time has elapsed.

27.3 Rules- vs. principles-based standards

In the aftermath of the aforementioned accounting scandals, a debate has emerged about the appropriate design of accounting and auditing standards. The question is whether standards should be made as precise and specific as possible (rules-based) or whether they should rely on general principles that

are more directed at the economic substance of transactions and have to be applied accordingly to a specific event.

In the USA, Section 108 (d) of the SOX required a study regarding the adoption of a principles-based accounting system for the USA. The study was presented by the SEC´s staff in July 2003 and contained a basic recommendation to adopt a more "objectives-oriented" accounting system. In October 2002, the FASB issued a proposal "Principles-based approach to U.S. standard setting" which was basically in favour of moving to a more principles-based system. In the EU, the relevant standards are those promulgated by the IASC and/or IFAC, and they are generally viewed as more principles-based compared to US-GAAP (see Benston et al. (2006), pp. 213 ff.).

For the purpose of this report, it is not intended to give a comprehensive survey of all the subtle facets that are discussed in the related literature (one can get an impression of these aspects with an international focus from the recent book by Benston et al. (2006)), let alone a recommendation of the best design of standards. Instead, we focus on potential links between the design of standards, auditor liability and audit quality.

First notice that the basic thrust of the economic analysis of auditor liability in Section 26 is essentially unaffected by the rules-vs.-principles issue. The reason is that – with respect to audit standards – the analysis of the negligence system already incorporates the comparison between precise and vague standards, and as has been argued in Section 26 (and in the related annex), the vagueness of audit standards may even constitute an advantage over precise standards if incentive issues are concerned.

However, as has also been mentioned in Section 26, no standard in reality can be so precise as to give definite guidance for each and every problem. Every audit involves more or less professional judgment on the part of the auditor, even if the standards on which the audits are based are deemed to be "precise". Hence, the question of rules-vs.-principles-based standards eventually centers around the degree of vagueness and judgment, but this leaves unchanged the basic effects of a vague negligence system.

Of course, the question of rules-vs.-principles-based standards not only concerns audit standards but also (and in the public view perhaps mainly) accounting standards. Unfortunately, based on the current knowledge it is virtually impossible to give a clear-cut assessment of the net effects of a completely principles-based system, and one can only speculate about possible consequences (see also DeFond and Francis (2005), p. 25).

The first effect of relying more on principles may be that managers get more discretion to reach their preferred earnings figures, which essentially increases the ex ante probability of earnings management. This puts more pressure on auditors to thoroughly check the numbers, but the final outcome of this process is hard to assess.

On the one hand, the auditor may utilise the increased discretion to better defend a "conservative" reporting approach. A possible reason for this could arise if "weak" standards make it easier for investors to sue and/or the courts use the increased uncertainty of what constitutes the "right" accounting in such a way as to more often impose damage payments on auditors. A possible strategy of an auditor to avoid this danger may be to insist on more conservative accounting. Given the managers´ desire and the new options to argue for higher earnings, this would lead to more disagreements between management and auditors with an open end regarding the final direction of the change in earnings figures.

On the other hand, the auditor could alternatively use the larger discretion to better accommodate the manager´s opinion, which eventually reinforces the manager´s incentives for aggressive earnings management.

Summing up, it is an open question whether the reported earnings will be more or less conservative by more relying on principles instead on specific rules, and the answer eventually depends on the efficacy of the entire system of governance and the way courts act under a specific liability regime. Especially the latter point is hard to assess in advance and eventually an empirical question that can only be answered after a change of the standards-design.

28 Different auditor liability regimes in the EU – the facts

As part of the preparations for the report to be submitted to the European Parliament, the EC DG Internal Market and Services has updated the 2001 legal analysis of the auditor liability regimes in the Member States (Thieffry & Associés, 2001).

According to this update[63], auditor liability is presently capped in Austria, Belgium, Germany, Greece and Slovenia.

In our empirical work, which uses 2004 data, we treat Belgium as having a regime of unlimited liability as the cap was only introduced in December 2005.

Only one Member State, namely Spain, has a regime of proportionate liability.

As there is practically no variation across the EU25 in terms of the regime of joint and several liability, the analysis in the following sections focuses only on the potential effects of capped versus uncapped liability regimes.

[63] See EC DG Internal Market and Services, *Questionnaire on the legal systems of civil liability of statutory auditors in the European Union – Partial update of the study carried out by Thieffry & Associates in 2001*, Note of September 2006.

29 Impact of different auditor liability regimes on audit quality

29.1 Context

At issue is whether a limitation on auditor liabilities, either through a cap and/or proportionate liability eventually reduces the quality of the financial statements. As was shown in the previous section, theory predicts that this is not necessarily the case, and, even if the informational content of the financial statements were to decline due to reduced audit efforts, this need not be detrimental from a broader perspective if cost-benefit aspects are taken into account.

In the present section we assess empirically whether differences in liability regimes impact on audit quality.

The empirical literature on the impact of auditor liability regimes on audit quality is scant and not conclusive.

Two recent U.S. studies by Lee and Maude (2003) and Geiger et al. (2006) conclude that, after the introduction of the Private Securities Litigation Reform Act in 1995 in the U.S., which, among others, changed the liability regime from joint and several to proportionate, audit quality seemed to have declined.

On the other hand, a study by Asbaugh and Gassen (2005) found that following the 1998 German audit reform, which increased the legal liability while still maintaining a cap, audit quality increased. However, as many other changes occurred at the same time, it is not clear whether the observed improvement in quality can be linked directly with the change in liability.

We now turn to the survey results before discussing our statistical analysis, which is reported in detail at Annex 7.

29.2 Survey results

Survey respondents were asked to provide their views on the likely impact of a limitation of auditor liability on how audited accounts would be viewed under such a regime.

The vast majority of respondents from both the Big-4 and the middle-tier firms were of the opinion that such a limitation would have no effect on how accounts audited under such a regime would be viewed by capital markets (see Table 70). In other words a limitation of auditor liability is not expected to affect the "value" of the audit.

A similar result holds when one separates the responses of audit firms from countries without a cap on liabilities from those with a liability cap.

Companies broadly hold similar views as 61% of the group of companies as a whole are of the view that the liability regime has no impact and only 27% are of the view that financial results audited under a regime of limited liability provide a less true and fair view.

Of note, however, is the fact that 54% of companies from countries with a liability cap are of the view that financial statements audited under a regime of limited liability provide a less true and fair view.

In contrast, a majority (55%) of institutional investors are concerned that the audit quality will be affected negatively by the introduction of a limit on auditor liability. Similar views were expressed by representatives of organisations of institutional investors.

Obviously, these are only perceptions. But, to the extent that investors act accordingly, such perceptions may have a real impact on the cost of capital of companies. This point is further explored in Section 33.

Table 66: Perception of audit quality of financial results by capital markets under different auditor liability regimes- Audit Firms (% of respondents)

Are financial results audited under a regime of limited auditor liabilities viewed by capital markets as different in terms of providing a less true and fair view than similar results audited under a regime of unlimited liability?	Big-4			Middle-Tier		
	Total	Cap	No Cap	Total	Cap	No Cap
Such financial results provide a less true and fair view	0%	0%	0%	7%	8%	7%
Such financial results provide a somewhat less true and fair view	1%	0%	1%	5%	0%	7%
There is no difference	99%	100%	99%	84%	92%	83%
Such financial results provide a somewhat more true and fair view	0%	0%	0%	3%	0%	4%
Such financial results provide a more true and fair view	0%	0%	0%	0%	0%	0%

Source: London Economics survey of audit firms

Table 67: Perception of audit quality of financial results under different auditor liability regimes- Companies and Institutional Investors (% of respondents)

Are financial results audited under a regime of limited auditor liabilities viewed by capital markets as different in terms of providing a less true and fair view than similar results audited under a regime of unlimited liability?	Companies			Institutional Investors
	Total	Cap	No Cap	Total
Such financial results provide a less true and fair view	7%	9%	6%	0%
Such financial results provide a somewhat less true and fair view	20%	45%	12%	45%
There is no difference	61%	45%	67%	55%
Such financial results provide a somewhat more true and fair view	5%	0%	6%	0%
Such financial results provide a more true and fair view	7%	0%	9%	0%

Source: London Economics survey of companies and institutional investors

29.3 Does auditor liability impact on the quality of audits – the results of an empirical investigation

A wide body of academic research has studied the determinants of audit quality and the most recent empirical work on audit quality focuses on accruals in the audited accounts as a proxy measure of audit quality.

The focus on accruals is based on the intuition that a key objective of an audit is the detection of earnings management and that accruals are a prime tool for such earnings manipulation.

Accruals are temporary adjustments that resolve timing problems in the underlying cash flows at the cost of making assumptions and estimates. Precise estimates imply a good match between current accruals and past, present, and future cash flow realizations, while imprecise or erroneous estimates reduce the beneficial role of accruals. Accordingly, accrual quality is defined as the extent to which accruals map into cash flow realisations.

Obviously accruals are only one dimension of audit quality. The absence of the need to restate accounts, the quality of the advice provided, for example, on the internal audit and control processes, the reports provided to the audit committees in certain countries, etc. are all important features of quality.

Unfortunately, none of these quality aspects is easily amenable to empirical statistical analysis as the information is either not publicly available at all (e.g., the audit letters or long-form audit reports), or very difficult to construct on a pan-European basis (e.g., restatements) or not amenable to quantitative analysis (e.g., quality of advice).

Therefore, we follow the empirical literature in the field and focus on earnings management as proxied by accruals management

A useful study in this field is the widely-recognised work by Dechow and Dichev (2002) who operationalise this notion of accrual quality as the standard deviation of the residuals from firm-specific regressions of working capital accruals on last-year, current, and one-year-ahead cash flow from operations. Another strand of the accrual literature focuses on discretionary accruals but, due to lack of relevant data, this approach could not be implemented.

One important feature of Dechow and Dichev (D&D)approach is that the notion of accrual estimation errors includes both intentional and unintentional errors. This distinction is important because most existing research assumes that accrual and earnings quality is only affected by management intent to manipulate, while such intent is unobservable, and likely idiosyncratic and sporadic.

In contrast, the work by D&D suggests that accrual quality is likely to be systematically related to observable and recurring firm characteristics like volatility of operations because higher volatility is associated with higher incidence of unavoidable estimation errors.

Using U.S. data, the authors find that accrual quality, and hence audit quality, is negatively related to the absolute magnitude of accruals, the length of the operating cycle, the loss incidence, and the standard deviation of sales, cash flows, accruals, and earnings, and positively related to firm size.

In our empirical work we replicated and expanded the work by D&D by applying their model to European data and including, in the set of drivers of quality, variables reflecting the legal auditor liability regime of the home country of the company.[64] In total, our sample includes 2,107 different companies in 17 EU Member States.

[64] See Annex 7 for the details of the empirical analysis.

We then expanded our analysis by following McNichols (2002) who links the D&D analysis of earnings quality to the literature on discretionary accruals, by adapting the D&D model to assess the specification of Jones' (1991) model. Jones' intent was to *separate* discretionary accruals from nondiscretionary accruals, while D&D's intent was to assess accruals as a whole, without attempting to separate management-induced effects from all other effects.

The results obtained with the European data are similar to those obtained with U.S. data.

In only two of the various model specifications did we find a negative effect on audit quality. However this result is not robust to sample and model changes and, therefore, we conclude that audit quality, as proxied by accruals management, does not appear to be significantly affected by the existence of a cap.

That being said, the results may be model specific, and an empirical analysis based on different definitions of quality may possibly reach different conclusions. However, as far we are aware, there exists no alternative credible definition of audit quality that can be used in an empirical analysis.

30 Impact of different auditor liability regimes on legal claims

In this section we investigate the impact different liability regimes may have on actual and potential legal claims faced by audit firms.

To shed some light on the claims faced by audit firms in the EU, AON has assembled information on all outstanding matters (formal legal claims and problems that have not yet given rise to formal claims but are likely to do so) as of 31st October 2005 and involving the Big-4 firms plus Grant Thornton and BDO.

It is important to note that the size of the eventual awards and settlements may be significantly smaller than the size of the matters reported in the table overleaf.

The information is provided by size of the matter and by country. There are a total of 69 outstanding matters (see Table 74).

While about a third of these matters are in the range of U.S. $10million to U.S. $30million, 11 are in the range of U.S. $200 million to U.S. $ 1 billion, and 5 are in excess of U.S. $ 1 billion.

In terms of geographical distribution of these matters, Italy is the country with the highest number of outstanding matters (21), followed by the UK (13) and the Benelux (7) and Spain/Portugal (7).

The only two countries on the list with a liability cap regime are Austria and Germany.

As one can see from Table 69, no discernible differences in the number and size of outstanding matters between these countries and the other countries are apparent.

This is due to the fact that the liability cap applies only in cases of negligence and not in cases where auditors intentionally misstated their views of the audited financial statements. Therefore, for strategic reasons, plaintiffs may pursue a case of intentional misstatement as the recovery could be higher, provided courts rule in their favour or firms settle to avoid the protracted costs of a case with a potentially uncertain outcome.

Thus, the matters facing firms in the countries with a cap can significantly exceed the level at which the liability is capped although the final quantum settled or awarded will not necessarily exceed the cap.

As a result, the evidence on outstanding matters does not provide any conclusive evidence, one way or another, about the effect of a liability cap on the size of claims and awards firms face in Europe. For such an analysis, one would need to undertake a cross-country comparison of awards/settlements

in relation to the initial claims. Unfortunately, no such country-specific data were available to us for the present study.

U.S. companies were asked to indicate whether a limitation of the liability of auditors would have any impact on the liability risk faced by auditors. Most had no specific view on this issue or rated the impact as neutral.

Table 68: U.S. companies' perception of impact of limitation of auditor liability
(% of respondents)

A limitation would	Share of respondents
Significantly reduce the auditors' liability risk	
Somewhat reduce the auditors' liability risk	30%
There is no difference	30%
Somewhat increase the auditors' liability risk	
Significantly increase the auditors' liability risk	
No opinion	40%

Source: London Economics survey of companies

Table 69: European Union - Outstanding matters involving major accounting firms- audit only, by country – U.S. $

Country	Liability cap in place	$10m-$30m	$30m-$100m	$100m-$200m	$200m-$1b	>$1b	Total
Austria	Yes	2	1	0	0	0	**3**
France	No	2 (1)	0	1	1	1	**5 (1)**
Germany	Yes	2 (1)	2	1		0	**5 (1)**
Italy	No	2	6	5	5	3 (2)	**21 (2)**
Republic of Ireland	No	0	1 (1)	0	0	0	**1 (1)**
United Kingdom	No	6 (1)	1	3 (2)	3	0	**13 (3)**
Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia	No except Slovenia	0	0	0	1	0	**1**
Belgium, Netherlands, Luxemburg	No except Belgium since December 2005	3	1	1	1 (1)	1 (1)	**7 (2)**
Denmark, Finland, Sweden	No	3	2	1	0	0	**6**
Portugal, Spain	No	4	3	0	0	0	**6**
Cyprus, Greece, Malta	No except Greece	0	0	0	0	0	**0**
European Union		**24 (3)**	**17 (1)**	**12 (2)**	**11 (1)**	**5 (3)**	**69 (10)**

Note: the numbers in parenthesis indicate the number of domestic EU matters which either have, or could have, a U.S. litigation connection.
Major accounting firms are: Deloitte Touche Tohmatsu, Ernst & Young, KPMG, PricewaterhouseCoopers, BDO, Grant Thornton.
Source: Aon

31 Impact of different auditor liability regimes on audit fees

Do different auditor liability regimes impact on the level of audit fees?

A number of studies (see for example, Fargher et al., 2001, Lyon and Maher, 2005, Seetharaman et al., 2002, Simunic and Stein, 1996) find that typically audit firms charge higher fees when the litigation risk is higher.

However, these studies generally do not assess whether the riskiness of the client is fully priced into the audit fee.

Moreover, the evidence on the link between risk, liability regime and audit fees generally relates to the US and, as far as we aware, only one study (by Fargher et al., 2001) undertakes a cross-country comparison.

Given the limited evidence on this critical topic, we asked respondents from audit firms to provide their views on whether the level of audit fees varies with the riskiness of the audit mandate and whether the risk was fully priced into the audit fees.

A large majority of respondents (83% in the case of Big-4 firms and 70% in the case of middle-tier firms) indicated that the level of fees varies with the riskiness of the assignment (see Table 71). According to audit industry representatives, this is due mainly to the fact that "riskier" clients require more work and not to the incorporation of a risk premium in the audit fee.

However, an even slightly larger majority (87% and 77% respectively) were of the view that the risk was not fully priced into the fees because of the intensity of competition among audit firms (see Table 71).

Obviously, such a situation is not a sustainable long-run equilibrium and some structural adjustment is likely to eventually occur.

We have also analysed separately the responses according to whether the respondent's home country had a regime of capped liability.

Regarding the relationship between audit fees and riskiness of the assignment, we find that the share of Big-4 respondents answering that the level of the audit fee varies with the riskiness of the assignment is the same across liability regimes. However, in the case of middle-tier firms, the link between audit fees and riskiness of the assignment appears to be somewhat dependent on the liability regime as only 42% of respondents from countries with a liability cap state that riskiness and audit fee are linked while 77% of respondents from countries with no liability cap indicated that the two are linked.

As for the effect of competition on the scope for charging risk-reflective audit fees, the answers from respondents from countries with a liability cap and without a liability cap are broadly similar.

Table 70 Relationship between the level of audit fees for statutory audits and riskiness of the assignment

The level of audit fees varies with the riskiness (in terms of potential liability and reputation)	Big-4 firms			Middle-tier firms		
	Total	Cap	No Cap	Total	Cap	No Cap
Yes	83%	83%	83%	70%	42%	77%
No	17%	17%	17%	30%	58%	23%

Source: London Economics survey of audit firms

Table 71 Competition in the market for statutory audits and pass-through of risk into audit fees

Competition in the market for statutory audits limits the scope for charging risk-reflective audit fees	Big-4 firms			Middle-tier		
	Total	Cap	No Cap	Total	Cap	No Cap
Yes	87%	83%	87%	77%	75%	77%
No	13%	17%	13%	23%	25%	23%

Source: London Economics survey of audit firms

32 Impact of different auditor liability regimes on the structure of the audit market

32.1 Context

A priori, one would expect that middle-tier firms would be more inclined to take on statutory audit mandates from larger clients in markets with auditor liability caps as the potential risk is more assumable, provided that the caps are set at relatively low levels.

The impact of proportionate liability on the willingness of middle-tier firms to provide audit services to large, listed companies is less clear as the total risk exposure could still be very large relative to the firm's revenues and the liability insurance available to it.

However, as should be clear by now, a whole range of factors explain why middle-tier firms are absent, in the main, from the large company audit market segment. Auditor liability is only one of these factors.

32.2 Auditor liability regime and market concentration

Overleaf, in Table 73, we reproduce the earlier data on the HHI for various groups of companies among all the listed companies on the regulated markets of the various stock exchanges in the EU. The information for the countries with a liability cap is highlighted in grey (see Table 73).

No significant differences between the group of countries with an auditor liability cap and the group of countries with no cap are observable in the case of the HHI for the top 20 companies in terms of size (see Table 72).

However, when the HHI is computed for the top 50 companies, the countries with an auditor liability cap show, on average, a significantly lower concentration figure than the countries without a cap.

This suggests that the existence of an auditor liability cap may help middle-tier firms break into the market segment that is largely dominated by the Big-4 firms in many countries. The very small size of the sample with an auditor liability cap, however, does not allow one to draw strong inferences from the data.

Obviously, many other factors may influence the presence of middle-tier firms in that particular segment. Nevertheless, the data in Table 72 suggest that an auditor liability cap may help open up the market for statutory audit of large companies but not the market for statutory audits of very large companies.

Finally, before reviewing the survey results relating to the impact of the auditor liability structure, it is important to recall that the low HHI figures for France, and to a lesser extent Denmark, reflect the fact that large companies are required to appoint two auditors. Typically, a company appoints a Big-4 firm and a middle-tier firm as the two auditors, and middle-tier firms have thus a greater market presence in terms of audit mandates. This explains the relatively low HHI.

Table 72: HHI[1] in statutory audit markets - countries with an auditor liability cap and without a cap

Group of countries	Top 20 companies by turnover	Top 50 companies by turnover
Average HHI across countries with a liability cap	2788	1776
Average HHI across countries with no cap	2751	2479

Note: (1) HII is based on number of mandates.
Source: London Economics calculations based on data in Table 73

Table 73: HHI[1] in EU statutory audit market by turnover size of companies - all companies listed on regulated national stock exchanges- 2004 – countries with and without a cap on auditor liability.

	Top 20	Top 50	Top 100	Top 150	Top 200	Top 300
BE[2]	2650	2288	1843	-	-	-
CZ	2325	-	-	-	-	-
DK	2218	1817	1492	-	-	-
DE	3325	1600	1249	1046	919	838
EE[3]	2200	-	-	-	-	-
EL	1750	1528	1452	1587	1823	-
ES	5150	3568	3003	-	-	-
FR	1951	1480	1252	1082	844	669
IE	3400	2288	-	-	-	-
IT	2650	2640	2614	2535	2462	-
CY	2250	2016	1625	-	-	-
LV	1000	-	-	-	-	-
LT	1950	-	-	-	-	-
LU	2100	-	-	-	-	-
HU	2575	-	-	-	-	-
MT[4]	3163	-	-	-	-	
NL	2925	2971	2488	-	-	-
AT	3100	-	-	-	-	-
PL	2400	1576	1084	848	-	-
PT	3225	2080	-	-	-	-
SI[5]	2977	-	-	-	-	-
SK	-	-	-	-	-	-
FI	5550	4104	3328	-	-	-
SE	3150	2556	2647	2628	2202	-
UK	2850	2776	2854	2882	2798	2659

Notes: (1) HHI based on number of mandates. (2) Since December 2005, Belgium has a cap on auditor liability. But, as the data refer to market concentration in 2004 , Belgium is not shown as having a cap in the table; (3) Estonia = 10 companies, (4) Malta = 14 companies, (5) Slovenia = only 15 companies are listed on the stock exchange.

Source: LE calculation using Amadeus and annual reports of companies

32.3 Survey results

The market structure may also be impacted by the behaviour of audit firms. They may decline to take on assignments or resign from assignments because of the actual or perceived riskiness of a client.

Networks and/or firms have implemented rigorous client assessment, mandate acceptance and periodic mandate review systems which aim to control risk both on an ex-ante basis and on an on-going basis.

Many have also indicated that their risk management has become tighter in recent years since 2002, leading to a higher number of mandate resignations and new mandate declines.

In the survey, we also asked participants to indicate whether their firm had resigned from mandates or declined to take on new mandates because of potential liability or reputation risk, and both Big-4 firms and middle-tier firms indicated that they have done so (see Table 74).

Two results are particularly striking:

1. Potential liability risk is the main reason for declining to take on an audit engagement or resigning from such an engagement;
2. The share of respondents reporting that, over the last six years, they declined to take on a mandate or resigned from one is slightly higher in the case of countries without a cap on auditor liability. But, the differences are relatively small, about 5 percentage points in the case of both Big-4 firms and middle tier-firms, and hence, one cannot argue that a systematically different behaviour is observable in the groups of countries (with and without a cap).

Table 74: Client risk and client acceptance by audit firms (in % of respondents)

Has the audit firm over the last six years declined to take on an audit assignment for a listed company or resigned from an assignment for a listed company because of concerns about the liability or reputation risk?	Big-4 firms			Middle tier firms		
	Total	Cap	Non-Cap	Total	Cap	Non-Cap
Yes because of potential liability risk	54%	50%	55%	31%	27%	32%
Yes because potential reputation risk	15%	25%	13%	2%	9%	0%
No	30%	25%	31%	67%	64%	68%

Source: London Economics survey of audit firms

Information was also provided by some firms on the geographical breakdown of the declines or resignations of the last six years. Table 75 below, shows the number of cases by EU Member State reported by a number of firms. Moreover, in all the EU25 Member States not listed in the table below, some firms reported having resigned and declined mandates in recent years without providing information on the number of such events.

The presence of a cap on auditor liability does not appear to have a marked effect on resignations and declines.

Table 75: Geographical distribution of audit mandate declines and resignations

Country	Share of total number of reported declines and resignations
CY	11%
BE	16%
DK	3%
EL	16%
HU	11%
IE	11%
LV	5%
LT	3%
LU	11%
NL	11%
SE	5%

Source: London Economics survey of audit firms

The survey also asked a number of questions about the characteristics of the companies whose audit mandate firms declined to take on or resigned from over the last six years. The questions focused on the size, sector and age of the company and the results are reported in Table 76 to Table 78.

The three key points to note are that:

1. The incidence of resignations and declines shows an inverse relationship with the size of the company, with small companies accounting for almost half of all declines and resignations. This may simply reflect the fact that the number of small companies is much larger than the number of larger companies;

2. The service sector, other than financial services, accounts for the bulk of all declines and resignations;
3. The incidence of declines and resignations is positively correlated with the age of the company. However, as in the case of the size distribution of the declines and resignations, this latter result may be simply due to the fact that the population of companies older than 7 years is much larger than the pool of very young companies, and may not necessarily reflect true differences in incidence rates by groups of companies.

Table 76: Size of companies whose audit mandates were declined or resigned

Size of company	Share of total number of declines or resignations
Micro and small companies with annual turnover of less than €10 million	44%
Companies with annual turnover of more than €10 million and less than €50 million	28%
Companies with annual turnover of more than €50 million and less than €500 million	25%
Companies with annual turnover of more than €500 million	4%

Source: London Economics survey of audit firms

Table 77: Sector of companies whose audit mandates were declined or resigned

Sector of company	Share of total number of declines or resignations
Agriculture, hunting, forestry and fishing	4%
Mining and quarrying	4%
Manufacturing	9%
Electricity, gas and water supply	0%
Construction	6%
Services other financial services	68%

Table 77: Sector of companies whose audit mandates were declined or resigned	
Sector of company	**Share of total number of declines or resignations**
Financial services	3%

Source: London Economics survey of audit firms

Table 78: Age of companies whose audit mandates were declined or resigned	
Age of company	**Share of total number of declines or resignations**
Less than 1 year old	0%
1 to 3 years old	15%
4 to 7 years old	33%
More than 7 years old	54%

Source: London Economics survey of audit firms

33 Impact of different auditor liability regimes on capital markets

33.1 Context

In this section we examine whether differences in auditor liability regimes impact on capital markets.

A two-pronged approach is used in this assessment.

First, we asked the survey respondents who had expressed the view that financial results audited under a regime of limited liability provide a less true and fair view to also indicate whether this would raise the companies' cost of capital.

Such views are naturally highly judgemental. But, to the extent that capital market participants tend to hold such views as true, they will have a real impact on the actual cost of capital as they will condition the behaviour of market participants.

Secondly, we undertook an extensive empirical investigation of the likely impact of differences in auditor liability regime on the cost of capital, building on models of the cost of capital found in the academic literature.

Below, we provide first an overview of the survey results and then a summary of the empirical analysis. A more detailed discussion of the empirical analysis is provided at Annex 8.

33.2 Survey results

The survey results below need to be put in proper perspective. The majority of the respondents from all groups (Big-4 firms, middle-tier firms, companies and institutional investors) think that there is no difference between financial statements audited under a capped liability regime or an uncapped regime (see Section 29) and only a minority holds the view that financial statements audited under a cap regime are of "lesser" quality (see Table 79).

Table 79: Share of respondents who believe that financial statements audited under a capped liability regime are of "lesser quality"[1]

Survey respondents	Share of survey responses
Big-4 firms	1%
Middle-tier firms	5%
Companies	27%
Institutional investors	45%

Note: (1) lesser quality = financial results provide a less true and fair view + financial results provide a somewhat less true and fair view in Table 66 and Table 67.
Source: London Economics survey of audit firms, companies and institutional investors

Within this minority of those who believe that audit quality is degraded under a capped liability regime, various parties have very different perceptions about the impact on the cost of capital (see Table 80 and Table 83).

- The Big-4 firms are overwhelmingly of the view that the cost of capital faced by companies is not affected by the legal auditor liability regime.
- In contrast, an almost equally large proportion of respondents from the middle-tier firms are of the view that the cost of capital for companies is higher under a regime of limited auditor liabilities.
- Moreover, a majority of respondents to the company and institutional investor survey are also of the view that a limited liability regime increases the cost of capital for companies.

The bottom line, however, overall is that only 19%[65] of the respondents to the company questionnaire and 32% of the respondents to the institutional investors survey questionnaire are of the view that limiting auditor liabilities would have an impact on the cost of capital.

Next, we examine whether such an effect can actually empirically be observed. This is the focus of the next sub-section.

[65] This percentage is equal to the percentage of respondents stating that a limitation of auditor liability will have a negative impact on the audit quality times the percentage of those respondents who also indicated that this will increase the cost of capital.

Table 80: Impact of limited auditor liability regime on the cost of capital of audited companies- Audit firms

Is the cost of capital for firms audited under a regime of limited liabilities higher relative to that of a firm audited under a regime of unlimited liabilities?	Big-4 firms			Middle tier firms		
	Total	Cap	No Cap	Total	Cap	No Cap
Yes	18%	0%	20%	73%	0%	89%
No	82%	100	80%	27%	100%	11%

Source: London Economics survey of audit firms

Table 81: Impact of limited auditor liability regime on the cost of capital of audited companies- Companies and Institutional Investors

Is the cost of capital for firms audited under a regime of limited liabilities higher relative to that of a firm audited under a regime of unlimited liabilities?	Companies			Institutional Investors
	Total	Cap	No Cap	Total
Yes	69%	67%	69%	58%
No	31%	33%	31%	42%

Source: London Economics survey of companies and institutional investors

33.3 Auditor liability regime and the cost of equity – the results of an empirical investigation

In Annex 8 we report the detailed results of an empirical investigation into the effects of different auditor liability regimes on companies' cost of equity capital. This section briefly discusses previous research on this question, our methodological approach, and our results.

Previous academic research

Recently, a number of studies have focused on the effects of securities legislation on the cost of capital and other measures of the strength of national stock markets.

Much of this research was made possible by the collection of data on securities legislation and the powers of supervisory authorities in 40 countries by La Porta, Lopez-Silanes and their co-authors. This literature typically

examines the effects of aggregated indices of the strength of investor protections in national law, without examining the effects of auditor liability regimes specifically.

This research has led to four main findings. First, countries with stronger protection of investors in securities law have greater stock market capitalisation as a share of GDP, controlling for other factors that might be expected to explain the variation in stock market capitalisation across countries (see La Porta et al. 2006). Second, companies in countries with stronger protections for investors in securities law have lower costs of equity capital (see Hail and Leuz 2006). Third, companies in countries with weaker protections for minority investors have higher rates of insider share ownership, i.e. managers own a greater share of the companies they manage (see Himmelberg et al. 2002). And fourth, companies with greater shares of insider ownership face higher costs of equity capital (again see Himmelberg et al.). The latter result would follow from managers' inability to diversify their risks when they own substantial stakes in the companies they manage.

The absence of specific studies of the effect of different auditor liability regimes is disappointing in the context of the current study, but reflects the constraints imposed by data availability.

Empirical methodology

Our empirical methodology is based on that used in recent studies of the effect of securities legislation on the cost of capital, such as Hail and Leuz (2006). We now briefly discuss our sample, our dependent variable, our independent variables and our regression model.

Our sample is composed of 1,109 publicly listed companies based in 17 EU countries. These are observed only at one point in time, namely April 2006. We took data on these companies from Bloomberg Professional and other country-specific data from other sources.

Our cost of capital measure is derived from the price-to-earnings ratio (see Annex 8 for details). Our independent variables are measures of the auditor liability regime, country-specific controls, and controls for the risk properties of individual companies. This is again in line with past research, which has shown that factors varying across companies within country explain a large amount of the variation in costs of capital across all companies.

The first category of independent variables includes the dummy variable for countries having a capped liability regime, and the La Porta index of whether accountants face a legal environment of strict liability for all errors or only those due to negligence.

Our country-specific controls are inflation, GDP per capita, an index of the legal requirements for company disclosures of information of interest to investors, an index of the powers of financial supervisory authorities, and an index of the general effectiveness of the judicial system. These measures of the institutional environment surrounding the relationship between

investors, managers and auditors are three main indicators of the many provided by La Porta et al.

Our company-specific controls are those measures typically used in the relevant literature to explain the risk properties of an individual stock, such as the correlation between the stock's return and that of the national market overall, otherwise know as the stock's beta. We also include the book to market ratio, measures of the firm's leverage, and a set of dummies for the company's industry sector.

Results

The empirical work yields two key results:

- First, we did not find any statistically significant impact of differences in auditor liability regimes on the cost of capital. This result is robust as the same results were obtained when running many variations of the model presented above, and we examined both the effect of the auditor liability regime as well as the effect of the "burden on accountants" index defined by La Porta et al. (2006); and,
- Second, the cost of capital is strongly affected by the strength of the legal and regulatory framework for securities in each country. In particular, disclosure requirements decrease the cost of capital.

34 Impact of different auditor liability regimes on staffing of audit firms

The survey questions also asked a number of questions regarding the impact of unlimited liability or very high liability limits on staffing.

The majority of respondents from both the Big-4 firms and the middle-tier firms are of the view that an unlimited liability regime or a very high liability regime make it more difficult to attract new talent into the profession (see Table 82) and more importantly, to retain experienced staff with a view to make them partners (see Table 83).

In general the answers of respondents from countries with and without a liability cap differ little.

A number of people have also pointed out in our meetings with audit firms that it has not only become more difficult to recruit and retain staff below the partner level, but that, because of the liability risk, audit partners also tend to leave the audit activity at a younger age.

These responses suggest that the audit industry is of the view that it faces very serious human resources problems which, if not addressed, could significantly impact on its role and performance.

Table 82: Impact of liability regime on attracting new talent

Does a regime with unlimited liability or very high liability limits make it more difficult to attract talented people into the audit profession?	Big-4 firms			Middle-tier firms		
	Total	Cap	No Cap	Total	Cap	No Cap
Yes	76%	82%	75%	61%	64%	60%
No	24%	18%	25%	39%	36%	40%

Source: London Economics survey of audit firms

Table 83: Impact of liability regime on retaining professional staff

Does a regime with unlimited liability or very high liability limits make it more difficult to retain professional staff with a view to them becoming a partner?	Big-4 firms			Middle-tier firms		
	Total	Cap	No Cap	Total	Cap	No Cap
Yes	93%	90%	93%	73%	83%	70%
No	7%	10%	7%	27%	17%	30%

Source: London Economics survey of audit firms

35 Summary and Conclusions of Part IV

This fourth part began with a theoretical assessment of the economic effects of auditor liability rules taking into account the interdependencies between auditors, company managers and investors (shareholders and creditors).

First, regarding the incentives to audit thoroughly, the analysis shows that a negligence-based liability system has a number of advantages relative to a strict liability system. Under a negligence-based system, an auditor is liable only if there are errors in the financial system and he/she has failed to deliver a certain level of due care while under strict liability, an auditor is always liable if there are errors in the financial statements. Under a negligence-based system, an auditor has greater incentive to increase the audit effort than under a strict liability system because it increases the probability that errors are detected, which leads to a reduction of the expected damage payments and it decreases the probability that the audit effort is viewed as negligent in a trial. Under a strict liability system, only the first effect is present. The overall benefit of either regime depends on how the legal costs are determined and the possibility of settlements. The superiority of either regime depends on the institutional arrangements.

Second, the analysis shows that the choice between joint and several liability and proportional liability can only be made once the various interactions between auditors, investors and company managers are taken into account. For example, under proportional liability the auditor may have a reduced incentive to deliver high audit efforts but the overall impact on the quality of the financial statements is not necessarily negative as managers may have a reduced incentive to engage in earnings management. Conversely, under joint and several liability the auditor will deliver a higher audit effort. However, because of the joint and several liability, investors have higher expectations of recovery in case of problems and this pushes up the price of the securities issued by the company as well as the sensitivity of price with respect to earnings. This in turn raises the incentive for managers to engage in earnings management which may eventually lead to a reduction in the quality of the financial statements.

Third, the analysis shows that unlimited liability may in certain cases imply that the costs of unlimited liability exceed the benefits from a welfare point of view. It is important to note that, in equilibrium, investors bear ex-ante the costs of any damages expected to be paid by auditors because the latter will include such costs into the fees charged to companies. Hence, in some sense the expected liability payments and the respective part of the audit fee cancel out in a market context. In fact, the extent of auditor liability has to take account of the incentives for audit efforts, the related audit and expected legal costs, and the resulting gross benefits from improved information in the capital market.

Obviously, the financial incentives of a given liability regime are not the only factors which drive audit efforts. Reputation and the actions of the

supervisory and enforcement bodies are equally important, reinforcing the point that a given regime result in a situation where the economic costs of unlimited liability exceed the benefits.

Independent public oversight bodies and regulatory enforcement bodies are additional important features of the regulatory environment for statutory audits which complement the direct incentive effects of the different liability regimes.

In contrast, the difference in effects of rules-based standards and principles-based standards on audit quality are less clear-cut. It is an open question whether reported earnings will be more or less conservative under a principles-based system as opposed to a rules-based system. The answer eventually depends on the efficacy of the entire system of governance and the way courts act under a specific liability regime. Especially the latter point is hard to assess in advance and is an empirical question that can only be answered after a change of the standards-design.

The vast majority of survey respondents from both the Big-4 and the middle-tier firms were of the opinion that a cap on auditor liabilities would have no effect on how accounts audited under such a regime would be viewed by capital markets. In other words, a limitation of auditor liability is not expected to affect the "value" of the audit.

However, companies are not so convinced as only 61% of the group of companies as a whole are of the view that the liability regime has no impact and 37% are of the view that financial results audited under a regime of limited liability provide a less true and fair view. Particularly striking is the fact that 51% of companies from countries with a liability cap are of the view that financial statements audited under a regime of limited liability provide a less true and fair view.

Moreover, 45% of institutional investors hold a similar view.

Finally, our own detailed empirical analysis of one dimension of audit quality, namely earnings management as proxied by accruals management, does not appear to be affected by the existence of a cap on auditor liability.

Obviously, audit quality cannot be reduced to a single dimension and encompasses many more factors. Unfortunately, there exists no or only limited information on the other aspects of audit quality (such as the quality of advice regarding internal audit and control processes, restatements of accounts, richness of letters or reports to the audit committee, etc.) and we relied therefore on the approach typically taken by the academic literature on determinants of audit quality.

There exist no comprehensive, publicly available, data on awards by the courts against audit firms regarding matters related to statutory audits nor on settlements by firms of such claims against them.

However, for the purpose of the present study, AON has assembled information on all outstanding matters (formal legal claims and issues that

have not yet given rise to formal claims but are likely to do so) involving the Big-4 firms plus Grant Thornton and BDO as of 31st October 2005.

While about a third of these matters are in the range of €6.7 million to €20 million (U.S..$10m to U.S. $30m) in size, 12 are in the range of € 160 million to €785 million (U.S. $200 million to U.S. $ 1 billion), and 5 are in excess of €785 million (U.S. $ 1 billion). Italy is the country with the highest number of outstanding matters (21), followed by the U.K. (13) and the Benelux (7). In total there are 69 such matters.

Germany, and Austria to a lesser extent, also show a number of large matters well above the country's liability cap. This reflects the fact that, for strategic reasons, plaintiffs typically argue that auditors intentionally misrepresented the true state of the company, in which case the cap does not apply. Whether the cap will be binding in such cases depends on the specific nature of the case. A firm may possibly decide to settle for an amount well less than originally claimed but above the cap to avoid protracted and costly court proceedings.

The bottom line is that the information available to us, namely the evidence on outstanding matters, does not provide any conclusive evidence, one way or another, about the effect of a liability cap on the size of claims and awards firms face in Europe.

Reflecting the riskiness of their activities, a large majority of audit firms (83% in the case of Big-4 firms and 70% in the case of middle-tier firms) indicated that the level of fees varies with the riskiness of the assignment. However, an even slightly larger majority (87% and 77% respectively) were of the view that the risk was not fully priced into the fees because of the intensity of competition among audit firms.

The responses from firms in countries with a liability cap were either almost identical or very similar to those from countries with no liability cap.

With regards to the impact of the auditor liability regime on the structure of the market for statutory audits, we do not find any significant differences in concentration, as measured by the HHI, in the narrow market of the top 20 companies between the group of countries with an auditor liability cap and the group of countries with no cap.

However, when the HHI is computed for the top 50 companies, the countries with an auditor liability cap show, on average, a significantly lower concentration figure than the countries without a cap.

This suggests that the existence of an auditor liability cap helps middle-tier firms to break into the market segment that is largely dominated by the Big-4 firms in many countries. But, obviously, many other factors may influence the presence of middle-tier firms in that particular segment.

Differences in liability regime do not appear to affect significantly the firms' attitude towards risk. Indeed, the survey results show that firms from countries without a cap on auditor liability are only marginally more inclined

to decline or resign from an audit mandate because of potential liability risk than firms from countries with a cap.

Moreover, in terms of the geographical distribution of such audit mandate declines and resignations, the differences in auditor liability regime do not appear to be a major factor.

Finally, with regard to the potential impact of the auditor liability regime on the cost of capital, the majority of middle-tier firms, companies and institutional investors who believe that financial statements audited under a capped liability regime are providing a less true and fair view are also of the opinion that a capped liability regime results in a higher cost of capital for companies.

However, because only a minority of respondents in each group hold the view that financial statements audited under a capped liability regime are of "lesser quality", the key conclusion is that the majority of respondents does not believe that the cost of capital is impacted.

Moreover, in our extensive empirical analysis of the determinants of the cost of capital we also failed to find any statistically robust evidence of such an impact.

Finally, an unlimited liability regime or a very high liability regime is viewed by the vast majority of audit firm respondents as making it more difficult to attract new talent into the profession and more importantly, retain experienced staff with a view to make them partners. Overall, the unlimited liability regime is perceived as having a potentially significant impact on the capacity of firms to supply the audit market.

Overall the key points to note from this fourth part of the study are:

- From a theoretical appoint of view, an unlimited liability regime may result in a situation where the economic costs of unlimited liability exceed the economic benefits;
- Differences in liability regimes are not perceived as having a significant impact on audit quality and the cost of capital of companies. Our results of our empirical analysis support this point of view;
- Differences in liability regimes do not appear to result in significantly different claims profiles because the liability limitation applies only to negligence cases and, for strategic reasons, plaintiffs may wish to argue intentional misconduct;
- However, a capped liability regime may contribute to reducing concentration in the market segment of statutory audits for large (but not very large) companies;
- Finally, a capped liability regime may also help firms address some of their staffing pressure points (i.e. attracting new recruits into the

audit activity and the retention of experienced staff, in particular partners).

Part V: How To Limit Auditors' Liability

36 Introduction

The previous sections have highlighted the fact that, from a public policy point of view, there may be some merit in limiting auditor liabilities. This raises immediately the issue of how to limit such liabilities. In a few EU Member States (Austria, Belgium, Germany, Greece and Slovenia), the legislation foresees an absolute limit ("a cap") while, a number of other Member States provide for the possibility to contractually limit the liability of the auditor and, in the UK, similar legislation is currently being debated by Parliament. However, in those countries other than the U.K., the auditor has a wider duty of care to other third parties (e.g., banks or individual shareholders) than is the case in the United Kingdom such that contractual liability limitations only partly address the auditor's total exposure

Auditor liability can be limited in a number of different ways and the purpose of this chapter is to inform public-policy making by expanding the range of potential forms of auditor liability limitations and assessing the potential impact of these various forms of limitations.

However, before examining in greater detail the various potential means for limiting auditors' liability, the main policy issues to consider in assessing these options are discussed below.

37 Main issues to take into account in assessing options for limiting liabilities

The main issues relate to:

- The objectives to be achieved by a limitation on auditor liability;
- Whether the limitation should be the same for all audits;
- Whether the limitation should be the same in all Member States;
- The impact on other parties; and,
- The impact on foreign risk.

Key objectives of a limitation on auditor liability

A number of different objectives may be targeted by the introduction of an auditor liability limitation for claims resulting from non-intentional conduct and not all forms of auditor liability limitation may achieve equally well each objective. Before discussing this point in greater detail, the reasons advanced in a number of countries for limiting auditor liability are documented below.

- In Austria the reasons for capping auditor liabilities were similar to those in Germany 1931 (see below) and were twofold[66]
    - The ceiling should guarantee that sufficient liability insurance is available.
    - The cap should facilitate the development of the audit profession, which at that time was essentially a new profession (mandatory audits existed not before 1931) with only few personal and professional resources.

- In Germany, the reasons for the introduction in 1931 of a ceiling on auditor liabilities were:
    - Ensuring that the auditor can undertake his/her work without worrying about the potential liabilities;
    - Ensuring the insurability of statutory audit risk

- In Belgium, the preamble to the article in the December 2005 law that introduced a cap gives the following reasons for capping auditors' liability[67]:

[66] See Doralt (2005), pp. 27-28.:

[67] Law of 23rd December 2005, Moniteur Belge of 30 December 2005.

- Unlimited liability does not increase audit quality. While a certain level of liability is reasonable, it is not reasonable to expect auditors to bear the cost of fraud by management or an internal accounting error;
- Concerns about the concentration of the audit market and the risk of disappearance of audit firms;
- A decrease in the potential number of audit liability insurance providers.
- A decrease of 50% to 70% in the risk coverage while the potential liability of auditors increased at the same rate of market capitalisation.
- In addition, an underlying preoccupation was to keep the audit profession sufficiently attractive for trainees and practitioners.

- In the UK, the reason given by the Government for providing for the possibility to contractually limit the auditors' liability is the vulnerability of firms viewed as having "deep pockets" in the aftermath of a company failure and thus asked to bear 100% of the compensation even though a firm's share of responsibility in the failure may be less than 100%.[68]

The arguments put forward in a number of countries for limiting the auditors' liability for statutory audits reflect different considerations and imply different forms of limitations, each with different potential impacts on the audit industry. These various forms of liability limitation and their potential impacts are discussed more extensively later in section 38.

The previous examples and, more generally, the analysis in the report so far suggest that any auditor liability limitation would aim to achieve the following three key objectives:

- Ensuring that capital markets are not disrupted by one very large award or a number of large awards which would result in the disappearance of one or more of the major Big-4 networks while maintaining strong incentives to produce audits of high quality;
- Helping improve the insurability of statutory audit activity by making the size of future claims more predictable; and,
- Fostering competition in the market for audits of large companies by facilitating entry by middle-tier firms into that market which is typically served by Big-4 firms or by limiting the plaintiff's ability to shift liability to the "deepest pocket defendant" (e.g., the audit firm)

[68] DTI (2005) Company Law Reform White Paper, March and DTI (2006) Regulatory Impact Assessment, June.

who may only be marginally responsible for the event giving rise to the claim.

Depending on the form of the limitation, these goals are not always mutually compatible and some trade-offs in progress towards the achievement of the three objectives may be required.

One size fits all audits?

While it is often argued that "an audit is an audit" and that, from a policy point of view, one should not introduce any distinctions between the numerous audits undertaken by audit firms, at issue is whether (and how) to recognise the fact the statutory audit liability risk varies with a certain number of characteristics of the company being audited. For example[69]:

- The magnitude of the statutory audit liability risk may vary with the size of the company whose accounts are being audited;
- The statutory audit liability risk may be higher in certain industries;
- The statutory audit risk exposure may be different for listed and unlisted companies.[70]

At the present time, the definition of the liability limit among the jurisdictions with a cap varies somewhat (see Table 84 overleaf):

- In Slovenia, there is an absolute cap which applies in all cases;
- In Belgium and Germany there is an absolute cap but the level of the cap varies according to the status of the audited company, i.e. the limit is different for unlisted and listed companies;
- In Austria, there is absolute cap whose level varies with the size of the company;
- In Greece, there is a variable cap. The cap is composed of a fixed minimum and an amount which varies with the level of the audit firm's total fee income.

[69] See for example the discussion in Section 31 of client risk and client acceptance by audit firms.

[70] In this regard it is important to recall that Article 31 of Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts specifies that the Commission's report is to focus on the "*impact of the current national liability rules for carrying out of statutory audits on European capital markets and on the insurance conditions for statutory auditors and audit firms*".

Policy design challenge

In light of the policy objectives listed earlier, a key challenge in designing an auditor liability limitation is finding the right balance between:

- On one hand, a limitation whose level is high enough to provide strong financial incentives to Big-4 audit firms to minimise the audit liability risk by undertaking high quality audits; and,
- On the other hand, a limitation whose level is low enough to encourage middle-tier firms to enter the market served by Big-4 firms by aligning more closely the middle-tier firms' potential exposure with their financial resources.

As will be seen later in this chapter, not all forms of liability limitations meet this design challenge equally well.

Table 84: Different forms of auditor liability caps in the EU25 and other countries

COUNTRY	CALCULATION	AMOUNT OF THE CAP	CONDITIONS
AUSTRIA	Per audit (audits of group accounts and individual accounts being counted separately)	€2 million: statutory audit of a small or medium sized company €4 million: statutory audit of a large company €8 million: if the fivefold of one of the size characteristics expressed in Euro of a large company is exceeded €12 million: statutory audit of a company, if the tenfold of one of the size characteristics expressed in Euro of a large company is exceeded Special amounts apply to banks and insurance companies	Scale not applicable to intentional conduct; applicable to claims by the audited company and claims of third parties
BELGIUM	Per mandate	€3 million (unlisted companies) €12 million (listed companies)	No cap in case of fraud or intentional tort; it may be waived by the auditor (effective only *inter partes*)
GERMANY	Per audit or per group audit	€1 million (unlisted company)	The cap is not applicable to intentional conduct

Table 84: Different forms of auditor liability caps in the EU25 and other countries

COUNTRY	CALCULATION	AMOUNT OF THE CAP	CONDITIONS
		€4 million (listed company)	conduct.
GREECE	Per breach	Five times the total of the annual emoluments of the President of the Supreme Court or the total of the fees of the liable Certified Auditor in the previous financial year provided that the latter exceeded the former limit	In case of audit firm, the cap refers to each shareholder or partner separately; cap not applicable to intentional conduct
SLOVENIA	N/A	€150,000	Cap applicable only to audited company and shareholders. In case of intentional tort or gross negligence the court may disregard the cap

Source: EC DG Internal Market and Services, Partial update of the study carried out by Thieffry & Associates in 2001, 2006

One size fits all EU Member States?

A second design issue facing EU policy-makers is whether the same limitation should apply identically in all Member States or whether some variation should be allowed to better reflect the specificity of each national audit market.

Both the size of the audit firms and the size of the largest national companies vary markedly across the EU25.

For example, the data reported in Table 85 show that the variation in size of the largest Big-4 firm in selected Member States is very large. Using audit and accounting fee income[71] as the metric for measuring the size of the audit firm, one observes that such income ranged in 2004 from €1,086m in the UK to €18m in Hungary.

Similar differences in size are observed with regards to the capitalisation and turnover of companies in the EU25.

[71] Audit and accounting fee income used to measure the size of the audit firm because this is the only fee income information which is available consistently across a number of EU Member States.

Table 86 provides, as of 17th September 2006, the market capitalisation, e.g., the stock market value, of the largest company, the median company and the smallest[72] company in the main index of each of the main national stock exchanges. Although the precise capitalisation figures fluctuate constantly, the differences in scale between companies reflected in Table 86 provide a good indication of the structural differences in company size across Europe.

To further illustrate the scale difference in company size, Table 86 also reports the size of a 5% and 10% change in the companies' stock market value. These data simply illustrate the fact that the size of the claims that audit firms could potentially face varies markedly across the EU25, a reality that one ought to take into account in designing a limitation of auditors' liability.

Similar information regarding the differences in size (turnover) of the 50 largest listed companies[73] on the main stock exchange in each of the EU25 Member States is provided in Table 87.

The companies with the highest market capitalisation (in Table 86) and the highest turnover (in Table 87) are not necessarily identical as the data are simply provided to give an illustration of the potential liability risk faced by firms under approaches in which the risk exposure is a function of either market capitalisation or company turnover.

For example, in terms of market capitalisation a claim of 5% against the largest company in the tables, a U.K. company, would imply a claim of €9,200 million while a claim of 5% based on the turnover of the largest company would imply a claim of €10,800 million.

To put these figures in perspective, it is also useful to compare them with the estimates of the largest claim the largest European firm could sustain in the UK. Earlier on in Section 16, it was shown that the size of such a claim was about €540 million. This is slightly less than 0.30% of the market capitalisation of the largest UK company and just under 0.25% of the turnover of the largest UK company.

[72] The company's capitalisation is used to measure the size of the company.

[73] When the main market of a stock exchange has fewer than 50 listed companies, all the companies on the main market are included in the company sample.

Table 85: Size of largest Big-4 and largest middle-tier firm in selected EU Member States - 2004, millions of €

Member State	Audit and accounting fees of largest Big-4 firm	Audit and accounting fees of largest middle-tier firm
France	503(e)	125
Germany	642	104(e)
Hungary	18	2
Netherlands	391	119
Italy	168	11
Spain	157	13
Sweden	229	22
United Kingdom	1,087	101

Source: London Economics calculations based on data from various issues of the International Accounting Bulletin. Data marked with (e) are estimates by London Economics

Table 86: Market capitalisation of companies in main index of national stock exchange in EU-25 – largest company, median company and smallest company by capitalisation in index, million of €

Country	Size of company	Market capitalisation	Size of a 5% decrease in market capitalisation	Size of a 10% decrease in market capitalisation
Austria	Largest	15,151	758	1,515
	Median	3,107	155	311
	Smallest	452	23	45
Belgium	Largest	40,679	2,034	4,068
	Median	5,617	281	562
	Smallest	853	43	85
Cyprus	Largest	3,990	200	399
	Median	79	3.9	7.9
	Smallest	6.6	0.3	0.7
Czech Republic	Largest	17,188	859	1,719
	Median	56	2.8	5.6

Table 86: Market capitalisation of companies in main index of national stock exchange in EU-25 – largest company, median company and smallest company by capitalisation in index, million of €

Country	Size of company	Market capitalisation	Size of a 5% decrease in market capitalisation	Size of a 10% decrease in market capitalisation
	Smallest	25	1.2	2.5
Germany	Largest	68,169	3,408	6,817
	Median	17,294	865	1,729
	Smallest	3,738	187	374
Denmark	Largest	26,661	1,333	2,666
	Median	3,568	178	357
	Smallest	548	27	55
Estonia	Largest	1,054	53	105
	Median	111	5.5	11.1
	Smallest	43	2.2	4.3
Greece	Largest	15,617	781	1,562
	Median	4,376	219	438
	Smallest	666	33	67
Spain	Largest	75,740	3,787	7,574
	Median	8,721	436	872
	Smallest	1,829	91	183
France	Largest	128,519	6,426	12,852
	Median	19,722	986	1,972
	Smallest	3,407	170	341
Finland	Largest	68,617	3,431	6,862
	Median	3,096	155	310
	Smallest	919	46	92
Hungary	Largest	9,096	455	910
	Median	788	39	79
	Smallest	30	1.5	3.0
Ireland	Largest	17,668	883	1,767
	Median	2,434	122	243

Table 86: Market capitalisation of companies in main index of national stock exchange in EU-25 – largest company, median company and smallest company by capitalisation in index, million of €

Country	Size of company	Market capitalisation	Size of a 5% decrease in market capitalisation	Size of a 10% decrease in market capitalisation
	Smallest	777	39	78
Italy	Largest	96,289	4,814	9,629
	Median	7,769	388	777
	Smallest	1,229	61	123
Lithuania	Largest	1,598	80	160
	Median	124	6.2	12
	Smallest	59	3.0	5.9
Luxembourg	Largest	11,300	565	1130
	Median	418	21	42
	Smallest	171	9	17
Latvia	Largest	791	39.5	79.1
	Median	300	15	30
	Smallest	84	4.2	8.4
Malta	Largest	462	23.1	46.2
	Median	75	3.7	7.5
	Smallest	6.8	0.3	0.7
The Netherlands	Largest	180,871	9,044	18,087
	Median	11,259	563	1,126
	Smallest	682	34	68
Poland	Largest	1,607	80	161
	Median	367	18	37
	Smallest	335	17	33
Portugal	Largest	11,628	581	1,163
	Median	1,695	85	170
	Smallest	22	1.1	2.2
Sweden	Largest	80,721	4,036	8,072
	Median	10,438	522	1,044

Table 86: Market capitalisation of companies in main index of national stock exchange in EU-25 – largest company, median company and smallest company by capitalisation in index, million of €

Country	Size of company	Market capitalisation	Size of a 5% decrease in market capitalisation	Size of a 10% decrease in market capitalisation
	Smallest	1,667	83	167
Slovenia	Largest	2,274	114	227
	Median	214	11	21
	Smallest	68	3.4	6.8
Slovakia	Largest	1,957	98	196
	Median	189	9	19
	Smallest	6.1	0.3	0.6
UK	Largest	183,935	9,197	18,394
	Median	9,044	452	904
	Smallest	4,138	207	414

Note: Data as of 17 September 2006.
Source: Bloomberg Professional Services and websites of national stock exchanges.

Table 87: Fifty largest listed firms by turnover, 2004 (€million)

Country	Size of Company	Total Turnover	5% of Total Turnover	10% of Total Turnover
Austria*	Largest	9,880	494	988
	Median	404	20	40
	Smallest	4.6	0.2	0.5
Belgium	Largest	40,739	2,037	4,074
	Median	854	43	85
	Smallest	208	10	21
Cyprus	Largest	1,203	60	120
	Median	412	20	41
	Smallest	19	0.9	1.9
Czech Republic*	Largest	4,088	204	409
	Median	189	9.5	18
	Smallest	0.9	0	0

Table 87: Fifty largest listed firms by turnover, 2004 (€million)				
Country	**Size of Company**	**Total Turnover**	**5% of Total Turnover**	**10% of Total Turnover**
Germany	Largest	142,954	7,148	14,295
	Median	7,699	385	770
	Smallest	2,443	122	244
Denmark	Largest	43,570	2,179	4,357
	Median	3,379	169	338
	Smallest	814	41	81
Estonia*	Largest	163	8	16
	Median	34	1.7	3.4
	Smallest	0	0	0
Greece	Largest	4,538	227	454
	Median	447	22	45
	Smallest	161	8.1	16
Spain	Largest	41,689	2,084	4,169
	Median	1,734	87	173
	Smallest	537	27	54
France	Largest	122,700	6,135	12,270
	Median	15,669	783	1,567
	Smallest	6,172	309	617
Finland	Largest	29,610	1,481	2,961
	Median	1,727	86	173
	Smallest	386	19	39
Hungary	Largest	7,784	389	778
	Median	11	1	1
	Smallest	1.1	0.1	0.1
Ireland	Largest	30,814	1,541	3,081
	Median	472	24	47
	Smallest	10	0	1
Italy	Largest	54,316	2,716	5,432
	Median	4,306	215	431
	Smallest	1,686	84	169
Lithuania*	Largest	2,202	110	220
	Median	33	1.7	3
	Smallest	2	0.1	0.2
Luxembourg*	Largest	60,717	3,036	6,072

Table 87: Fifty largest listed firms by turnover, 2004 (€million)				
Country	**Size of Company**	**Total Turnover**	**5% of Total Turnover**	**10% of Total Turnover**
	Median	1	0	0.1
	Smallest	4	0.2	0
Latvia*	Largest	178	8.9	17.8
	Median	9	0	1
	Smallest	0	0	0
Malta*	Largest	126	6.3	12
	Median	91	4.5	9.1
	Smallest	3	0.1	0.3
The Netherlands		67,814	3,391	6,781
	Median	3,475	174	348
	Smallest	1,005	50	100
Poland	Largest	10,091	505	1,009
	Median	320	16	32
	Smallest	144	7	14
Portugal	Largest	23,881	1,194	2,388
	Median	515	26	51
	Smallest	8	0.4	0.8
Sweden	Largest	42,281	2,114	4,228
	Median	3,708	185	371
	Smallest	895	45	89
Slovenia*	Largest	1,602	80	160
	Median	172	9	17
	Smallest	4	0.2	0.4
Slovakia*	Largest	7,784	389	778
	Median	248	12	25
	Smallest	0.4	0	0
UK	Largest	216,304	10,815	21,630
	Median	15,268	763	1,527
	Smallest	7,487	374	749

Note: * = Countries in which there are less than 50 companies listed on the main market of the stock exchange.
Source: Amadeus, annual reports of individual companies and LE calculations

Impact of introduction of a limitation on other parties

Any limitation of auditors' liability relative to a situation of unlimited auditor liability will shift to other parties some of the burden of future claims that audit firms may face.

First, and foremost, it increases the claims risk faced by directors and officers of companies. This is because parties seeking compensation for a loss, incurred as a result of management fraud or other forms of misbehaviour that remained undetected by the audit, are likely to seek greater compensation from directors and officers when the auditor's liability is limited. Not only will directors and officers face a greater risk, but the insurance costs of directors and officers' liability are also likely to rise, and depending on future developments, insurance availability may decrease.

Because the focus of the present report is on liability of auditors for statutory audits, we do not address shifts of liability risk that may arise from broader liability limitation regarding other activities undertaken by audit firms. In particular, we do not address potential shifts in liability risk to external advisors to the company such as investment banks, actuaries and property valuers that would arise with a broader limitation of auditors' liability.

A rebalancing of risks towards those having caused the damage in the first instance may be appropriate. But, in considering the merits of an auditor liability limitation one should be cognisant of the potential impact on other parties. As shown earlier in the report, this reduces also the company managers' incentives to manage earnings. This decreases the probability that the company, shareholders and third parties suffer damages and, hence, alleviates the fact that with limited auditor liability the quantum of recovery is smaller.

It is possible that, in some cases, the total amount settled by both the audit firm and the directors and officers of the company will be less than the amount that would have been settled by the audit firm in a regime of unlimited liability. Such an outcome depends obviously on both the level of the auditor liability limit and the level of insurance cover held by the directors and officers, but it is possible that parties having sustained losses will be able to recover lesser amounts than they would have without any limit on auditor liability.

Impact on foreign risk

As noted in the part of this report (Part II) which discusses the insurance issues faced by audit firms, the latter face both domestic and foreign risks. As shown in Section 13:

1. A firm may face a claim filed in a foreign country regarding audit services provided to a company residing in the same country as the audit firm if the company has some link with the foreign country;

2. A firm may face a claim filed in a foreign country regarding audit services provided as part of the audit or group audit of company of a company domiciled in the foreign country;
3. Furthermore, audit firms may potentially also face additional foreign risks in the future regarding:
    a. the audit undertaken by another firm of a foreign subsidiary of a company for which the firm is the group auditor [74]
    b. a claim filed against a network as a separate entity from its constituent member firms.
4. In addition, in cases where the survival of a firm, which is a linchpin of a network, is at a risk because of a large claim against it, partners of other firms in the network may need to assist financially the threatened firm(s) to ensure the survival of the network.

It is important to note that, while any EU-wide limitation of auditors' liability will reduce the risk arising from transnational activities within the EU, it does not reduce the risk arising from firms' audit activities that have a non-EU, especially a U.S., link.

[74] Under the recently adopted Directive 2006/43/EC, the group auditor bears the full responsibility for the audit report in relation to the consolidated accounts. However, no jurisprudence exists yet and this is an issue which needs to be further examined.

38 Options for limiting auditors' liability for statutory audits

Different forms of auditor liability limitations can be envisaged.

First, one needs to distinguish between contractual limitations decided by parties to the audit contract and legislative/regulatory limitations.

- The former is the approach proposed in the legislation currently being reviewed by the UK Parliament. A necessary condition for such an approach is that the auditors' duty of care is narrowly defined as being to the company being audited. In the UK, in ordinary circumstances, auditors owe a duty of care only to the members of a company as a body (including shareholders of the company collectively in their capacity as members but not shareholders in their individual capacity). In a majority of other Member States, any third party may recover damages from the statutory auditor upon proving the elements of the liability claim; usually fault (intentional conduct or negligence in any degree), damages and causal link. In those countries it would be difficult to adopt the UK approach.
- The legislative route is the one which has been used in Austria, Belgium, Germany, Greece and Slovenia.

As, in many EU Member States, the duty of care of auditors extends beyond the company, we discuss below only non-contractual models of auditor limitations which would be implemented across the board by legislation or regulation.

Overall, there exist three broad types of statutory audit liability limitation. These include:

- An absolute limit (or absolute cap);
- A variable limit which varies with either the size of the company being audited or the size of the audit firm (variable cap);
- A limitation of the liability to the contribution of the audit firm to the damage suffered by plaintiff (proportionate liability);

Within the "variable cap" model, there exist a number of variants and these are discussed below.

Moreover, one could envisage combining some of the key features of the three types of approaches into a composite model (for example, a cap and proportionate liability) and two such models are also discussed below.

38.1 Criteria for assessing the different models of auditor liability limitation

How should various potential approaches for limiting liability be assessed? Obviously, the criteria will need to be related to the policy objectives underlying the introduction of a limit on auditor liability. The following four criteria are the most useful in our view:

- Criterion 1: Impact on risk that one or several Big-4 firms disappear in case of catastrophic claims;
- Criterion 2: Impact on insurability of statutory audit liability risk;
- Criterion 3: Impact on competition and entry by middle-tier firms into the market for statutory audits of large companies;
- Criterion 4: Impact on audit quality. In this regard it is useful to recall that the theoretical analysis in Section 26.1 showed that in certain cases the economic costs of unlimited liability may exceed the benefits.

It should be noted that the analysis focuses on the economic aspects of the various options and does not explicitly undertake a legal assessment of limitations to plaintiffs' rights to compensation.

The specific weight one may wish to give to each of the above criteria depends on the specific characteristics and functioning of the audit market in each Member State and may vary across the EU.

For example, the first part of this report showed that the degree of concentration in the market for statutory audits of large companies varies across Member States. One may wish to give a greater weight to criterion 3 in markets that are very highly concentrated.

If, however, one is particularly concerned about the potential impact of the disappearance of one or several Big-4 networks, one may wish to give a greater weight to criteria 1 and 2.

Conversely, if there are concerns in a specific market about the quality of audits, one may wish to give a greater weight to criterion 4.

To illustrate this point, three examples are discussed in greater detail below. These relate to the Netherlands, Spain and Sweden, all EU Member States in which auditor liability is not currently limited by an absolute or variable cap. The set of countries for which such an analysis can be undertaken is highly limited due to the fact that information on the income of audit firms is not available in many cases (see Table 85).

When one uses the size of the potential statutory audit risk, proxied here by the size of a 1% decrease in the market capitalisation of the largest company in terms of market capitalisation, these 3 countries fall into 2 different groups.

- In the Netherlands, the potential risk is about €1.8 billion;
- In contrast, in Spain and Sweden, the potential risk is only €0.8 billion.

All three markets for statutory audits of large companies are highly concentrated.

Moreover, the size of the largest firms [75]in the different markets ranged from €391 million to only €157 million in Spain.

Because of these pronounced differences in firm sizes, the maximum claim that the largest firm could sustain in each country varies also markedly, from €195 million in the Netherlands to €80 million in Spain.

These facts vividly illustrate the many differences in the characteristics of EU statutory audit markets. As shown below, they also provide some guidance with respect to the weight to give to the different criteria.

Criterion 1: Impact on risk that one or several Big-4 firms disappear in case of catastrophic claims. In all three countries, the market for statutory audits of large companies is highly concentrated. Therefore, in the short to medium term, it would be desirable to give a high weight to this criterion in the assessment of the various options for limiting auditor's liability for statutory audits.

This would be particularly the case for firms which are also linchpins of their network. Their disappearance would have a greater impact at the European level, and more generally through the world. Policy-makers may wish to take account of this additional dimension in determining the weight to give to criterion 1 in their assessment of the policy options. In the case of the three countries, this suggests that a somewhat greater weight could be given to this criterion in the case of the Netherlands.

Criterion 2: Impact on insurability of statutory liability risk. The greater the risk exposure and the smaller the capacity of firms to sustain a large shock, the greater the risk that a Big-4 firm disappears. To the extent that the first criterion is viewed as being very important, this second criterion suggests that the weight to be given to it should be a function of the ratio of risk to claim absorption capacity. In the examples discussed above, this ratio is the highest in Spain (9.5) and the Netherlands (9.2). This suggests that particular attention should be paid in these countries to the impact of the form of liability limitation on insurability of statutory liability risk. That being said, in all cases, the ratio of risk to claim absorption capacity is also well above 1 in Sweden which suggests that criterion 2 should also be given in that country a significant weight in any assessment of the liability limitation options.

Criterion 3: Impact on competition and entry by middle-tier firms into the market for statutory audits of large companies. In all three markets, the level of concentration in the market for statutory audits of large companies is very

[75] The size of the firm is based on total accounting and audit fee income (see Table 85 for details).

high. This suggests that considerable weight should also be given to this criterion in the three countries. If the four-firm concentration figure (C4) was lower, say in the seventies or even low eighties, a lower weight could be given to the criterion.

Criterion 4: Impact on audit quality. As noted earlier in Section 26.1, the relationship between audit quality and audit liability is not linear. Where each Member State stands with regard to this relationship and the overall level of audit quality is very much an empirical issue. It depends on the general audit quality performance in the Member State, and the fewer the concerns about audit quality, the lower the weight that should be attached to this fourth criterion.

Table 88: Statutory audit market and risk in selected EU Member States

Country	Size of the risk (approximated by 1 per cent decrease in the market capitalisation of the largest company on the stock exchange (€, million)	Level of concentration in market for statutory audits of blue-chip companies C4	Size of the largest firm – 2004 (audit and accounting fees, € million)	Maximum single claim that largest firm can sustain[1] (€, million)
Netherlands	1,810	100	391	195
Spain	757	97	157	80
Sweden	810	99	229	115

Note: (1) Maximum claim for each country is estimated as the ratio of the audit and accounting fee income of the largest firm in country to the audit and accounting fee income of the largest firm in the UK times the maximum claim that the largest UK firm can sustain.
Source: London Economics

The discussion above did not address the issue of the desirable level of the limitation as, at the present time, insufficient information is available to provide a precise quantitative estimate. Factors that would need to be taken into account are the size of the Big-4 and middle-tier firms in relation to the potential risk, the expected frequency and magnitude of future claims and, importantly, the amount of insurance cover that could become available if the auditors' liability were to be limited.

No separate criterion focusing on the impact of a limitation of auditors' liability on other potential defendants is used in the analysis below as, in all limitation models, some of the liability risk is shifted to directors and officers. The precise reallocation of risk depends more on the level of the limitation of the auditor's liability than on its precise form.

As all models allow for high or low levels of auditor liability, they cannot be assessed on the basis of the impact on other potential defendants.

By the same token, the various auditor liability limitation models cannot be assessed on the basis of the impact on plaintiffs as again such an assessment depends on the level of the liability limit relative to the damage suffered by the plaintiffs.

As any limitation brings about systemic change, with possibly unintended consequences, it would also be worthwhile to consider reviewing the impact of any auditor liability limitation after a certain period, say 5 years and take account at that time of any new circumstances in the audit market.

Finally, it should also be noted that none of the models below provide iron-clad protection as, once a limitation on liability for unintentional errors is in place, plaintiffs are likely to argue that there was intent and seek compensation in excess of the limit. Obviously, such a possibility already exists nowadays, but it is possible that, once the liability is limited, plaintiffs will take this route more frequently to circumvent the limitation. Even in the absence of clearly fraudulent intent by the audit firm, a firm may decide to settle at a level above the limit to avoid the high costs of a protracted claim case.

38.2 Models for limiting auditors' statutory audit liability

Model 1: an absolute cap set at x million euros

A variant of this model is the Belgian and German approach which provides for different cap levels for listed and unlisted companies.

Assessment:

Criterion 1: An absolute cap, provided the limit is not set too high and is applied, prevents a situation in which one or more Big-4 firms are at risk.

Criterion 2: An absolute cap could result in an increase in insurance capacity for auditor liability risk as the level of exposure per claim becomes more certain.

Criterion 3: The effect of a cap on competition and entry by middle-tier firms depends on the level of the cap relative to the resources of the middle-tier firms. A high cap that is primarily geared towards the risk faced by the Big-4 firms is unlikely to result in entry and greater competition.

Criterion 4: The impact of the limitation on audit quality depends largely on the precise level of the limitation and it is not possible, at

this stage, to draw general conclusions as to the effects on audit quality. As shown in Part IV, the current level of liability may be too high in the sense that the economic costs exceed the economic benefits. On the other hand, too low a level of liability could reduce the incentive for auditors to perform high quality audits. That being said, any shift of risk towards officers and directors is likely to reduce their incentive to engage in earnings management.

Model 2: A variable cap whose level is a function of the size of the company being audited

This type of model includes a number of variants.

a) The size of the company can be measured by turnover or by capitalisation;

b) The relationship between the level of the cap and the size of the company may be fixed, e.g. the liability level is set at a fixed factor of the size of the company, or the relationship may be characterised by a step function as, for example, in the case of the Austrian cap.

In considering the pros and cons of the variants of this type of approach, it is important to note that:

- There exist also very large non-listed companies in many Member States and a limit based on market capitalisation would not be useful for this segment of the audit market;
- Market capitalisation is typically more volatile than turnover, making it more difficult to quantify precisely the risk for insurance purposes when compared to limits based on turnover;
- But, market capitalisation is directly linked to the incentive of company managers to manage earnings. Linking the level of the auditor's liability to market capitalisation may lead the auditor to focus more on the relevant risks on the financial statements.

Assessment:

Criterion 1: Such an approach reduces the risk faced by Big-4 firms but does not eliminate it completely unless the limitation factor was set at a very low level.

Criterion 2: Certainty and predictability about future claims and their size is improved somewhat but considerably less so than in a regime with an absolute cap, unless an absolute cap is also provided for (as in the Austrian case). Insurance capacity for auditor liability risk may possibly increase as a result, but this is highly uncertain at this stage.

Criterion 3: Such a limitation may encourage middle-tier firms to consider providing audit services to the smaller of the larger companies served by the Big-4 firms but is unlikely to be an incentive to enter the market for statutory audits of large and very large European companies as the liability risk associated with such audits remains large in relation to the middle-tier firms' resources unless the limitation is set at a very low level of companies' capitalisation. The competition impact is likely to be small to nil.

Criterion 4: As already noted, the impact of the limitation on audit quality depends largely on the precise level of the limitation. As audit quality and audit effort depend in part and up to certain point on audit liability, a system with an absolute cap may be less advantageous than a system with a variable cap.

Model 3: A variable cap whose level is a function of the audit fees or size of the firm undertaking the audit

This type of approach includes models where the cap is:

a) A function of the audit fee earned by the firm in undertaking the audit of the company;

b) A function of total audit fee income of the firm having undertaken the audit of the company;

c) A function of total audit and non-audit fee income of the firm having undertaken the audit of the company.

A variant of model 3 has been adopted in Greece where the auditors' liability for statutory audits comprises a minimum level and then increases in line with the level of the audit fee.

Until the full implementation of the disclosure of the audit fees provided by the Audit Directive, such an approach would suffer from a lack of transparency in Member States in which audit fees do not have to be disclosed at the present time. This, however, is only a temporary issue as full disclosure is required by this Directive.

Below we discuss only the model in which the liability limit is a function of the audit fee earned by the audit firm in undertaking the audit as the impacts of linking the liability limit either to total audit fee income or total audit and non-audit fee income are even less favourable than the impact of the approach linking the size of the auditor's liability to the level of the audit fee.

Assessment:

Criterion 1: Such an approach reduces the risk faced by Big-4 firms but does not eliminate it completely unless the factor by which the audit fee income is multiplied to determine the liability limit is set at a low level and/or there is also an absolute cap.

Criterion 2: Certainty and predictability about future claims and their size is improved but less so than in a regime with an absolute cap, unless the regime provides also for an absolute cap.

Criterion 3: Such a limitation may encourage middle-tier firms to consider providing audit services to the smaller of the larger companies served by the Big-4 firms. But, unless there is also a cap, the limitation is unlikely to be an incentive to enter the market for statutory audits of large and very large European companies as the liability risk associated with such audits remains large in relation to the middle-tier firms' resources unless the limitation is set at a very multiple of audit fees. In the absence of an upper limit, the competition impact is likely to be small.

Criterion 4: As already noted, the impact of the limitation on audit quality depends largely on the precise level of the limitation. That being said a regime with an absolute cap may be less advantageous than a system with a variable cap.

Model 4: The liability is limited to the contribution of the audit firm to the damage suffered by plaintiff (proportionate liability) [76]

A conceptually different type of approach restricts the maximum contribution of the audit firms to the damages resulting from their own actions so that they can no longer be "deep pocket" targets of plaintiffs.

Assessment:

Criterion 1: Such an approach reduces the size of the potential claims faced by Big-4 firms and thus reduces somewhat the risk that one or several Big-4 firms could disappear.

Criterion 2: Certainty and predictability about future claims and their size is only marginally improved as audit firms may still face very large claims relating to their own actions. The level of actual damages attributable to the audit firm would still need to be decided on a case-by-case basis. Insurance capacity for auditor liability risk is therefore unlikely to increase significantly.

Criterion 3: Such a limitation is unlikely to encourage middle-tier firms to consider providing audit services to large and very large

[76] It is our understanding that, in many EU jurisdictions, auditors are only liable for damages resulting from their own fault. But, through application of general civil liability principles, if their fault is considered to be a fault without which the full damage would not have occurred, the courts may hold the auditor, as well as directors, liable to compensate the plaintiff in full if the plaintiff is a third party. In a case where the plaintiff is the audited company itself, in almost all the Member States the statutory auditor may raise the audited company's own fault as a defence in a claim brought by the audited company. In this case, damages to be paid by the auditor to the audited company can be reduced according to the degree of fault of each party.

European companies as the liability risk associated with such audits remains large in relation to the middle-tier firms' resources.

Criterion 4: As in this model the auditors' liability for its own actions remains unlimited, the impact on audit quality relative to current circumstances is unlikely to be significant

A variant of such a model is an approach where, in addition to providing for proportionate liability, the new liability regime foresees that the actual liability faced by audit firms is limited to a predetermined fraction of the actual damages incurred by plaintiffs. In other words, proportionate liability would be combined with a variable cap whose level is a function of the damages attributed to the audit firm. While such an approach alleviates some of the problems identified above, it is still characterised by considerable uncertainty as the actual level of damages for which the audit would be responsible would still need to be decided in each case.

It should also be noted that model 4 can be combined with any of the previous three models to provide for capped and proportionate liability.

39 Conclusions

The two key messages from this section are that:

1. The diversity of circumstances in terms of both audits and company size is such that it is unlikely that a one-size-fits-all EU-wide approach is the most useful. Given this diversity, the different EU Member States may require a certain latitude to adopt an approach that fits best their specific circumstances;
2. The key issue in terms of reduced risk for audit firms and increased competition by the audit firms is not so much the precise form of the limitation as the level of liability that firms face in a regime in which auditors' liability is limited. A relatively high limit may be appropriate for the Big-4 firms as it serves as a potential incentive to focus on audit quality and to deal with higher audit risk but may not result in significant entry of middle-tier firms into the audit market served by Big-4 firms. Conversely, a liability limit which is low enough to encourage middle-tier firms to audit larger companies may not provide the appropriate incentives to the Big-4 firms.

Part VI: Key Conclusions

40 Key summary conclusions

This section sets out in a summary form the conclusions of the study.

The market for statutory audits of large and very large companies is highly concentrated and dominated by the Big-4 networks. Moreover, the structure of this market is unlikely to change much in the coming years.

This is because middle-tier firms face a number of barriers to entry into the market. Such barriers are reputation, capacity and breadth of their networks, and the exposure to unlimited liability in most Member States combined with very limited professional insurance availability.

Middle-tier firms may make some inroads into the market for statutory audits of large and very large companies if the reputational barrier is overcome through a change in attitude towards such firms by companies and investors.

But, the other structural barriers will still constrain the scope and breadth of their presence in that market over the coming years.

As a result, over the foreseeable future, middle-tier networks, even merged or consolidated, are unlikely to become a major alternative to the Big-4 networks or a substitute for a failed Big-4 network.

The level of auditor liability insurance available for higher limits from the commercial market has fallen sharply in recent years in terms of both the level and amount of insurance, and the conditions under which the insurance cover is effective. The current level of commercial insurance is such that it would cover less than 5% of some of the large claims some firms face nowadays in some EU Member States.

Moreover, the price of that insurance has risen sharply, doubling over the last five years in the case of the reinsurance provided to the captives of the Big-4 networks.

In addition, some plaintiffs may be nowadays more inclined to maximise their recoveries than in the past.

Thus, the risk of a large award or settlement that Big-4 firms would have to assume themselves, either directly or through their captives, has increased substantially in recent years.

Once a firm has exhausted the limited cover provided by the network's captive, the remaining source of funds is essentially the partners' income. At issue then for a firm is how large an income cut partners would be willing to take before leaving the firm in droves, resulting in the collapse of the firm.

The profession is already viewed as increasingly less attractive and as risky, and, in their replies to the survey, audit firms have indicated that unlimited liability makes it more difficult to attract talented people into the profession but, much more importantly, to retain professional staff with a view to

becoming partners. A major claim that threatens the survival of a firm would simply reinforce the negative perceptions about the profession.

The general view from the Big-4 networks is that any financial obligation requiring more than a 15% to 20% cut in income for more than 3 to 4 years would likely result in the collapse of the firm.

To put this risk in perspective, it is estimated that the largest single claim the largest firm in Europe could sustain over a certain period once the resources of the network's captive are exhausted is about €540 million, or less than 0.3% of the market capitalisation of the largest UK company by market size and just under 0.25% of the turnover of the largest UK company by turnover.

In light of the number of large actual or potential claims outstanding, the risk of an award or settlement in excess of the tipping threshold is far from nil, and one of the major Big-4 networks could possibly fail as a result.

A limitation on auditor liability would reduce the risk of potential catastrophic claims.

A small number of EU Member States (Austria, Belgium, Germany, Greece and Slovenia) have a statutory limitation on auditors and in the U.K. a bill currently reviewed by Parliament foresees proportional liability by contract.

While there exist a number of variants of a statutory audit liability limitation, the diversity of circumstances in terms of both audits and company size is such that it is unlikely that a one-size-fits-all EU-wide approach is the most useful.

The key issue in terms of reduced risk for audit firms and increased competition by the audit firms is not so much the precise form of the limitation as the level of liability that firms face in a regime in which auditors' liability is limited:

- A relatively high limit may be appropriate for the Big-4 firms as it serves as a potential incentive to focus on audit quality but may not result in significant entry of middle-tier firms into the audit market served by Big-4 firms.

- Conversely, a liability limit which is low enough to encourage middle-tier firms to audit larger companies may not provide the appropriate incentives to the Big-4 firms.

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Part VII Annexes

Annex 1 List of interviews and meetings

Organisation	Name of official
Audit firms	
Baker Tilly	Laurence Longe, Managing partner
Ernst & Young	Victoria Cochrane, General Counsel, Head of Quality and Risk Management Group
	John Constantine, Director Professional Indemnity Insurance
Deloitte, Touche and Tohmatsu(1)	Tom Cryer, Chairman, Nautilus Indemnity Holdings Ltd
	Jeff Willemain, Global Managing Partner, Risk and Regulatory
KPMG	Neil Lerner
PwC	Richard P B Smith
PWC – L&F Indemnity Limited	Geoffrey E. Johnson, Chief Executive Officer
BDO(1)	Noel Clehane
	Paul van Elten
Grant Thornton	Laurence P Kehoe, Head (Partner)
	Simon Duffy, Senior Solicitor
RSM Robson Rhodes	Chris Connor, Senior Partner
Audit Organisations	
Institute of Chartered Accountants in England & Wales (ICAEW)	Eric Anstee, Chief Executive Office
	Tony Bromell, Head of accountancy markets and ethics
	Martin Manuzi, Director European Union Office
Institut des Réviseurs d'Entreprises	André Kilesse, Président
	David Szafran, Secrétaire Général
Institut der Wirtschaftsprüfer in Deutschland e.V	Prof. Dr. Klaus-Peter Naumann, CEO
	Manfred Hamannt, Technical Director Law and Taxes IDW
Wirtschaftsprüferkammer	Dieter Ulrich, President
	Dr. Jens Schüring

Insurance sector

Aon	Simon Thompson, Director Global Liability Practice
Axa	Paul-Henri Rastoul – Directeur technique sinistres corporels et responsabilité civile
Versicherungsstelle Wiesbaden	Dr. jur. Ulf Pohl, Direktor
	Hans-Jörg Schriever, Assessor
Comité Européen des Assurances	Jean-Louis Marsaud, Directeur
Guy Carpenter & Company Ltd, appointed representative of Marsh Ltd	David B. Lewin, Managing Director
Royal&Sunalliance	Phil Bell, Technical Insurances Manager
Munich Re(1)	T. Wollstein, Director
Swiss Re(1)	Richard Murray, Chief Claims Strategist Claims Liability Management
Willis	David Thomas - Global Markets, International
Independent Consultant(1)	Peter Christie

Other

Association of British Insurers	Peter Montagnon
LIBA	William J. Ferrari, Director
	Corporate Finance Committee
National Association of Pension Funds	David Paterson
In addition, a number of institutional investors were interviewed by phone.	

Note: (1) By telephone

Annex 2 Questionnaire to audit firms

Economic impact of auditors' liabilities
Questionnaire to audit firms

Notes to the questionnaire

General information

This questionnaire is divided in five different sections:

- The first section seeks information about the survey respondent;
- The second section focuses on the state of the market for audit firms located in the EU;
- The third section addresses the issue of the economic impact of alternative auditors' liability regime;
- The fourth section focuses on the potential impact of the disappearance of one the Big 4 audit firms;
- The fifth section seeks information on the market for insurance of auditor liability.

The primary focus of the research is on audit services provided to listed companies, i.e. companies whose equity and/or debt instruments are listed on one of the European stock exchanges.

In a few instances, detailed financial information is sought. Unless otherwise specified, please express your answer in thousands (000) of €.

Glossary of terms used in the questionnaire

Audit liability risk: The risk of a future liability claim against an audit firm related to its audit activities.

Audit services: In this questionnaire, audit services always refer to statutory audit services. A statutory audit involves carrying out an audit of the annual accounts of a company (or a body of undertakings) and verifying that the annual report (annual consolidated report in the case of a body of undertakings) is consistent with those annual (consolidated) accounts when such an audit and such verification is required by law.

Non-audit services: All services other than audit services provided by audit firms to companies. Non-audit services include, among others, the provision of financial information technology, internal audit services, tax services, valuation services, litigation services, recruitment services, general business management services. Non-audit services may be provided to non-audit clients without limitation. Limitations on audit services will apply only when delivering non-audit services to audit clients.

Audit and non-audit fees: Remuneration for audit and non-audit services supplied by audit firms to companies.

Big 4 audit firms: This group of audit firms includes Deloitte Touche Tohmatsu, Ernst & Young, KPMG and PricewaterhouseCoopers.

Big 5 audit firms: This group of audit firms includes the Big 4 plus former Arthur Andersen.

Company: Any entity organised as a limited liability entity undertaking an economic activity other than the provision of audit services.

Independence regulations: Set of regulations aimed at ensuring that, when carrying out a statutory audit, the statutory auditor or audit firm is independent from the audited company.

Insurance premium: The annual cost of the insurance paid by the insured party to the insurer.

Liability insurance: The insurance against liability risks.

Listed company: A company whose transferable securities (shares, bonds or any other securities giving the right to acquire or sell any such transferable securities or giving rise to a cash settlement determined by reference to transferable securities, currencies, interest rates or yields, commodities or other indices or measures) are admitted to trading on a so-called "regulated market" in the EU, within the meaning of the MIFID , and which are now required to apply IFRS for consolidated account in 2005 or in 2007.

Middle-tier audit firms: This group includes all the audit firms other than Big 4 firms that belong to smaller networks and generally undertake statutory audits of medium-size companies as well as occasionally of larger companies

Network: Larger structure aimed at cooperation to which a statutory auditor or an audit firm belongs and which is clearly aimed at profit sharing or shares common ownership, control or management, common quality control policies and procedures, a common business strategy, the use of a common brand-name or a significant part of professional resources.

Turnover: Value of products or services sold, net of taxation (e.g., Value Added Tax).

Section I: Identification of respondent

Name of undertaking	
Name of person completing the questionnaire	
Position	
Address	
Telephone number	
E-mail	

	1999	2000	2001	2002	2003	2004	2005[1]
Number of employees (in thousands)							
Total fee income – audit and non-audit (in thousands of €)							
Total audit fee income (in thousands of €)							
Number of listed companies whose accounts were audited by your firm							
Number of countries in which the audit firm provides audit services[2]							
Are you linked with other audit firms through networks, cooperation agreements, etc. Please answer with yes /no in the columns overleaf and elaborate in Box 1 below.							

(1) Please indicate whether the 2005 figures are estimated (e) or actual (a) data

(2) *Information is being sought about whether the audit firm audits accounts of clients from outside its home country.*

Box 1: Networks and cooperation agreements

Section II State of the international market for audit firms located in the EU

Question 1: How do audit firms compete? Please rate on a scale of 1 (least important) to 5 (most important) the following competition factors:

- Price ……..
- Quality in terms ability/capacity ……
- Quality in terms of reliability ……
- Reputation/brand name ……
- Geographical spread ……..
- Industry knowledge ……..
- Staff knowledge ……..
- Size of the network ……..
- Other (please specify) …….. (Explanation:……..
- Please add any comments you may wish to make:

……
……
……

Question 2: How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors as having contributed to increased concentration?

- Economies of scale (i.e., the cost efficiencies arising from operating on a larger scale): ……
  - Please explain your assessment:……..
- Economies of scope (i.e., the greater cost efficiency of delivering to client a variety of audit and non-audit services by a single provider instead of a number of service providers delivering single services):…….
  - Please explain your assessment:……..……..
- Risk management (i.e. reduced availability of audit liability insurance):……
  - Please explain your assessment:……..……..
- Changing client needs (such as the need for a multinational presence):….
  - Please explain your assessment:……..……..
- Changes in accounting standards:……
  - Please explain your assessment:……..
- Other regulatory changes:……
  - Please explain your assessment:….....
- Disappearance of one of the major audit firms:
  - Please explain your assessment:……..
- Greater emphasis on detailed industry knowledge:…..

- Please explain your assessment:……..

- Greater emphasis on specialised expertise of staff:…..
  - Please explain your assessment:……..
- Other:….
  - Please specify and explain your assessment……

    ……..

Question 3: How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors as barriers for audit firms other than the Big 4 to provide audit services to listed companies typically audited by one of the Big 4 audit firms?

- Audit firms are too small and lack capacity to handle audit assignments undertaken typically by large audit firms:…..
  - Please explain your assessment:…….....
- Audit firms cannot provide audit services covering many countries:….
  - Please explain your assessment:…….
- Reputation of big four audit firms:……
  - Please explain your assessment:…….
- Client switching inertia:….
  - Please explain your assessment:…….
- Audit liability risk:…..
  - Please explain your assessment:…….
- Lack of adequate audit liability insurance:….
  - Please explain your assessment:…….
- Other:….
  - Please specify, and explain your assessment…….

    ……

Question 4: This question relates only to the choice of audit firm for the provision of audit services in a company's home country. What are in your view the main factors which determine a company's choice of provider of audit services?

……
……
……

Question 5: This question relates only to the choice of audit firm for the provision of audit services in a company's home country. How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors in selecting an audit firm?

- Size of the audit firm:….
  - Please explain your assessment:……..
- Multinational presence of the audit firm:…..
  - Please explain your assessment:……..
- Reputation of the audit firm:……
  - Please explain your assessment:……...
- Previous experience of the audit firm:….
  - Please explain your assessment:……
- Knowledge by the audit firm of the company:…
  - Please explain your assessment:…….

- Knowledge by the audit firm of the industry(ies) in which the company operates:….
  - Please explain your assessment:……..
- Previous experience by the company with audit firm:….
  - Please explain your assessment:……..
- References from others about the audit firm:….
  - Please explain your assessment:……..
- Other:…..
  - Please explain your assessment:……..

Question 6: This question relates only to the choice of audit firm for the provision of audit services in a company's home country. How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors as restrictions in obtaining the desired type of audit services? Please select one or more of the following:

- Number of audit services providers capable of meeting the firms' audit needs is too small:…
  - Please explain your assessment:……...
- There is not enough competition in the audit market:….
  - Please explain your assessment:……...
- The costs of the audit services……
  - Please explain your assessment:……...
- Lack of adequate audit liability insurance:…..
  - Please explain your assessment:……..
- Local rules governing auditor independence:……
  - Please explain your assessment:……..
- Other:….
  - Please specify and explain your assessment:……

    ……
    ……

Question 7: How many companies did the audit firm acquire as new audit clients over the last six years? Please provide separate answer for listed and non-listed companies.

- Listed companies:……
- Non-listed companies:……

Question 8: How many listed companies did the audit firm loose as existing audit clients over the last six years? Please provide separate answer for listed and non-listed companies.

- Listed companies:…….
- Non-listed companies:……

Question 9: In your view, how important were the following factors in having led clients to change from another audit service provider to you. Please rate the following factors on a scale of 1 (not important) to 5 (very important):

- Regulatory requirement (such as statutory rotation, etc):……
- Resignation or failure to seek re-appointment by audit firm:…
- Appointment of a group auditor:….
- Company merger or take-over:…..
- Conflicts of interest of audit firm:……

- Unsatisfied with quality of audit work of incumbent audit firm:…
- Different opinions regarding the financial statements and the company's reporting strategy:….
- Not enough "advisory suggestions" from incumbent audit firm
- Audit fees of incumbent too high:…..
- Advisory fees of incumbent too high:….
- Firm policy of regular rotation of audit firm:…
- New policy to procure separately audit and advisory services:…..
- Changing needs of the company, such as for example as a result greater international presence:….
- Changing needs of the company as a result of a change in or development of new activities
- Logistical issues (nearness of the audit office, etc):….
- Views of the investors
- Other (please specify):……

Question 10: How do you rate the likelihood of M&A among small and medium-sized audit firms in each of the EU Member States and on a pan-European scale over the next three years? Please select tick one the following "low", "average" and "high" in the table below. Complete the information only for the countries of which you have specific knowledge.

Likelihood of M&A among small and medium-sized audit firms			
Country	Likelihood		
	Low	Average	High

Please elaborate on the reasons underlying your answer(s):

……
……
……

Question 11: Please identify below the major obstacles to mergers between small and medium-sized audit firms within national markets:

- Non-regulatory obstacles (please elaborate)

  :……
  ……

- Regulatory obstacles (please elaborate)

  :……
  ……

- Legal obstacles (please elaborate)

  :……
  ……

- Structural obstacles (such as the organisation of audit firms as partnerships) (please elaborate)

  ……
  ……

Question 12: Please identify below the major obstacles to mergers between small and medium-sized audit firms across national markets within the EU:

- Non-regulatory obstacles (please elaborate)

  :……
  ……

- Regulatory obstacles (please elaborate)

  :……
  ……

- Legal obstacles (please elaborate)

  :……
  ……

- Structural obstacles (such as the organisation of audit firms as partnerships) (please elaborate)

  ……
  ……

Section III Economic impact of alternative auditors' liability regime

Question 13: Liability insurance bought by audit firms covers both audit and non-audit services. In the company's view, how do audit firms aim to recover the liability insurance premiums across audit and non-audit fees? Please tick relevant answer below:

- o Liability insurance premiums are fully reflected in fees for audit services and not all in fees for non-audit services:……
- o Liability insurance premiums are mainly reflected in fees for audit services and only marginally in fees for non-audit services:……..
- o Liability insurance premiums are about equally reflected in fees for audit services and non-audit services:……..
- o Liability insurance premiums are only marginally in fees for audit services and mainly in fees for non-audit services:……..
- o Liability insurance premiums are not at all reflected in fees for audit services and fully in fees for non-audit services:……..

Please add any comments you wish to make:

……
…….

Question 14: Does the standard audit charge-out rate contain different loadings for insurance/risk cover in countries with some form of limited liability (capped or proportional)?

Please tick the relevant answer below:

- o Loadings for insurance/risk cover are higher:……
- o No difference in loadings:……..
- o Loadings for insurance/risk cover are lower:……..
- o Please add any comments you wish to make:

  ……
  …….

Question 15: Has the audit firm over the last six years declined to take on an audit assignment for a listed company or resigned from an assignment for a listed company because of concerns about the liability or reputation risk? Please select below the relevant answer:

- o Yes because of the potential liability risk:……
- o Yes because of the potential reputation risk:…..
- o No:……..

Please add any comments you wish to make:

……
…….

If the answer is "Yes", please specify the number of such occurrences arising from concerns about the potential liability risk broken down along the criteria listed in the table below:

Number of audit assignments declined or resigned	
Member State (please specify)	**Number of cases**
Company size	
Micro and small companies with annual turnover of less than €10 million	
Medium size companies with annual turnover of more than €10 million and less than €50 million	
Large companies with annual turnover of more than €50 million and less than €500 million	
Very large companies with annual turnover greater than €500 million	
Industry	
- Agriculture, hunting, forestry, fishing	
- Mining and quarrying	
- Manufacturing	
- Electricity, gas and water supply	
- Construction	
- Services other than financial services	
- Financial services	
Age of the firm	
- Less than 1 year old	
- 1 to 3 years old	
- 4 to 7 years old	

- More than 7 years old	

Question 16: Does the level of audit fees charged for statutory audits vary with the riskiness (in terms of potential liability and reputation) of the assignment? Please tick one of the following:

- Yes:….. No:…..

If your answer is "Yes", please explain below how such risk is factored in. If your answer is "No", please explain below why this is the case.

……
……

Question 17: In your view, does the competition in the market for statutory audits limit the scope for charging risk-reflective audit fees. Please tick one of the following:

- Yes:….. No:…..

If your answer is "Yes", please explain below how such risk is factored in. If your answer is "No", please explain below why this is the case.

……
……

Question 18: Does a severe liability regime make it more difficult to attract talented people into the audit profession? By severe regime we mean a regime of unlimited liability or a regime with very high liability limits. Please tick one the following:

- Yes:…… No:……..
- Please add any comments you wish to make:

  ……
  ……..

Question 19: Does a severe liability regime make it more difficult to retain professional personnel with a view to them becoming partners? Please tick one the following:

- Yes:…… No:……..
- Please add any comments you wish to make:

……
……..

Question 20: Are financial results audited under a regime of limited auditor liabilities viewed by capital markets as different in terms of providing a less true and fair view than similar results audited under a regime of unlimited liability? Please select one of the following:

- They provide a less true and fair view:….
- They provide a somewhat less true and fair view:…..
- No impact:…..
- They provide a somewhat more true and fair view:…..
- They provide a truer and fair view:…..

Please add any comments you wish to make:

……
……..

Question 21: If your answer to the previous question is "Yes", in your view, does this raise the cost of capital for firms audited under a regime of limited liabilities relative to a firm whose results are audited under a regime of unlimited liabilities? Please select one of the following:

- Yes:……
- No:……..
- Please add any comments you wish to make:

……
…….

Section IV Likely short-term and long-term effects of the possible disappearance of one or more of the Big-4 firm audit firms

Question 22: If one of the Big 4 audit firm were to collapse, what do you believe would happen in the short term (e.g., within 1 year) to its listed audit clients? Please tick the relevant answer:

- Clients would move exclusively to the remaining large audit firms:……
- Clients would move mainly to the remaining large audit firms with some moving to middle-tier firms:……
    - Please provide the proportion in () of clients that you would expect to move middle-tier firms:…….
- Clients would move mainly to middle-tier audit firms with some moving to the remaining large audit firms:…..
    - Please provide the proportion in () of clients that you would expect to move middle-tier firms:…….
- Clients would move exclusively to the middle-tier audit firms

Please add any comments you wish to make:

……
……
……

Question 23: If one of the Big 4 audit firm were to collapse, on a scale of 1 (very unlikely) to 5 (very likely), how likely are following issues in the short term (e.g., within 1 year):

- Listed companies in higher-risk industries will be unable to find a large audit firm willing to undertake the audit:…..
- Listed companies in higher-risk industries will be unable to find any audit firm willing to undertake the audit:……

Please add any comments you wish to make:

……
……
……

Question 24: If one of the Big 4 audit firm were to collapse, what do you believe would happen over the medium term (more than 1 year and less than 6 years after the collapse) to their listed audit clients? Please tick the relevant answer:

- Clients would move exclusively to the remaining large audit firms:……
- Clients would move mainly to the remaining large audit firms with some moving to middle-tier firms:……
    - Please provide the proportion in () of clients that you would expect to move middle-tier firms:…….
- Clients would move mainly to middle-tier audit firms with some moving to the remaining large audit firms:…..
    - Please provide the proportion in () of clients that you would expect to move middle-tier firms:…….

- Clients would move exclusively to the middle-tier audit firms

Please add any comments you wish to make:

……
……
……

Question 25: If one of the Big 4 audit firm were to collapse, how likely on a scale of 1 (very unlikely) to 5 (very likely) are the following issues over the medium term (e.g., more than 1 year and less than 6 years after the collapse):

- Listed companies in higher-risk industries will be unable to find a large audit firm willing to undertake the audit:…..
- Listed companies in higher-risk industries will be unable to find any audit firm willing to undertake the audit:……

Please add any comments you wish to make:

……
……
……

Question 26: In the case of a disappearance of one of the Big 4 audit firms, how likely would you rate on scale of 1 (very unlikely) to 5 (very likely) the probability that middle-tier audit firms will be capable and willing to audit the clients of the Big 4 audit firm which disappeared. Please provide an answer for both the short term (e.g., within 1 year) and medium term (more than 1 year and less than 6 years after the collapse):

Short term:….. Medium term:……

Please provide the reasons for your answer:

……
……
……

Question 27: What other consequences would the disappearance of one of the Big 4 audit firm have? Please distinguish between short-term effects (e.g., within 1 year) and medium-term effects (more than 1 year and less than 6 years after the collapse).

……
……
……
……

Section V Insurance market for statutory audit

Question 28: Please provide below details of your liability insurance.

- If applicable, maximum amount of coverage per claim by independent insurer:……(in millions of €)
- Total maximum amount of coverage by independent insurer:…….(in millions of €)
- Is this maximum amount greater than the statutory/regulatory liability requirement in your home country? Please tick one of the following: Yes:… No:….
- Is this a network-procured insurance? Please tick one of the following: Yes:….. No:…….
- Amount of insurance premiums paid to independent insurer in 2005:……..(in 000s of €)

Please add any comments you wish to make about the current insurance arrangements

……
……
……
……

Question 29: Does the liability coverage currently provided by your independent insurer meet the level of coverage you would wish to have from independent insurers? Please select one of the following: Yes:….. No:……

If your answer is "No", please specify what percentage the actual coverage represents of the desired coverage through independent insurers:……

Please add any comments you wish to make about the current insurance arrangements

……
……
……
……

Question 30: Please explain below what other measures you are taking to manage the audit liability risk:

……
……
……
……

Question 31: What impact would a public auditor oversight body overseeing independently the audit quality assurance system have on quality? Please tick one of the following and provide your reasons below:

- Will greatly improve quality:…..
- Will improve somewhat the quality:…..
- Will have no impact on quality:…..
- Will result in somewhat lower quality:…..
- Will result in lower quality:…….

Reasons:……
……

……
……..

Question 32: Would a public auditor oversight body overseeing the audit quality assurance reduce the audit liability risk? Please tick one of the following and provide your reasons below:

- Will reduce the audit liability risk:…..
- Will reduce somewhat the audit liability risk:….
- Will have no impact on the audit liability risk:…..
- Will increase somewhat the audit liability risk:…..
- Will increase the audit liability risk:…….

Reasons:……
……
……
……..

Question 33: Would a public auditor oversight body overseeing the audit quality assurance lead independent insurers to increase the coverage for the liability of audit firms? Please tick one of the following and provide your reasons below:

- Will increase availability of coverage:…..
- Will increase somewhat availability of coverage:……
- Will have no impact on availability of coverage:…..

Please provide the reason(s) for your answer:

……
……
……
……..

Annex 3 Questionnaire to companies

Economic impact of auditors' liabilities

Questionnaire to companies

Notes to the questionnaire

General information

This questionnaire is divided in five different sections:

- The first section seeks information about the survey respondent;
- The second section focuses on the state of the market for audit firms located in the EU;
- The third section addresses the issue of the economic impact of alternative auditors' liability regime;
- The fourth section focuses on the potential impact of the disappearance of one the Big 4 audit firms;
- The fifth section seeks information on the market for insurance of statutory audit.

The primary focus of the research is on audit services provided to listed companies, i.e. companies whose equity and/or debt instruments are listed on one of the European stock exchanges.

In a few instances, detailed financial information is sought. Unless otherwise specified, please express your answer in thousands (000) of €.

Glossary of terms used in the questionnaire

Audit liability risk: The risk of a future liability claim against an audit firm related to its audit activities.

Audit services: In this questionnaire, audit services always refer to statutory audit services. A statutory audit involves carrying out an audit of the annual accounts of a company (or a body of undertakings) and verifying that the annual report (annual consolidated report in the case of a body of undertakings) is consistent with those annual (consolidated) accounts when such an audit and such verification is required by law.

Non-audit services: All services other than audit services provided by audit firms to companies. Non-audit services include, among others, the provision of financial information technology, internal audit services, tax services, valuation services, litigation services, recruitment services, general business management services. Non-audit services may be provided to non-audit clients without limitation. Limitations on audit services will apply only when delivering non-audit services to audit clients.

Audit and non-audit fees: Remuneration for audit and non-audit services supplied by audit firms to companies.

Big 4 audit firms: This group of audit firms includes Deloitte Touche Tohmatsu, Ernst & Young, KPMG and PricewaterhouseCoopers.

Big 5 audit firms: This group of audit firms includes the Big 4 plus former Arthur Andersen.

Company: Any entity organised as a limited liability entity undertaking an economic activity other than the provision of audit services.

Independence regulations: Set of regulations aimed at ensuring that, when carrying out a statutory audit, the statutory auditor or audit firm is independent from the audited company.

Insurance premium: The annual cost of the insurance paid by the insured party to the insurer.

Liability insurance: The insurance against liability risks.

Listed company: A company whose transferable securities (shares, bonds or any other securities giving the

right to acquire or sell any such transferable securities or giving rise to a cash settlement determined by reference to transferable securities, currencies, interest rates or yields, commodities or other indices or measures) are admitted to trading on a so-called "regulated market" in the EU, within the meaning of the MIFID , and which are now required to apply IFRS for consolidated account in 2005 or in 2007.

Middle-tier audit firms: This group includes all the audit firms other than Big 4 firms that belong to smaller networks and generally undertake statutory audits of medium-size companies as well as occasionally of larger companies

Network: Larger structure aimed at cooperation to which a statutory auditor or an audit firm belongs and which is clearly aimed at profit sharing or shares common ownership, control or management, common quality control policies and procedures, a common business strategy, the use of a common brand-name or a significant part of professional resources.

Turnover: Value of products or services sold, net of taxation (e.g., Value Added Tax).

Section I: Identification of respondent

Name of company	
Name of person completing the questionnaire	
Position	
Address	
Telephone number	
E-mail	

	1999	2000	2001	2002	2003	2004	2005
Number of employees – company (in thousands)							
Number of employees – group (in thousands)							
Total turnover - company (in thousands of €)							
Total turnover – group (in thousands of €)							

Please indicate whether the 2005 figures are estimated (e) or actual (a) data

Section II State of the international market for audit firms located in the EU

Question 1: How do audit firms compete? Please rate on a scale of 1 (least important) to 5 (most important) the following competition factors:

- Price ……..
- Quality in terms ability/capacity ……
- Quality in terms of reliability ..……
- Reputation/brand name ..……
- Geographical spread ……..
- Industry knowledge ……..
- Staff knowledge ……..
- Size of the network ……..
- Other (please specify) …….. (Explanation:……..

  ……

- Please add any comments you may wish to make:

……
……
……

Question 2: How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors as having contributed to increased concentration?

- Economies of scale (i.e., the cost efficiencies arising from operating on a larger scale): ……
  - Please explain your assessment:……..
- Economies of scope (i.e., the greater cost efficiency of delivering to client a variety of audit and non-audit services by a single provider instead of a number of service providers delivering single services):…….
  - Please explain your assessment:……..……..
- Risk management (i.e. reduced availability of audit liability insurance):……
  - Please explain your assessment:……..……..
- Changing client needs (such as the need for a multinational presence):….
  - Please explain your assessment:……..……..
- Changes in accounting standards:……
  - Please explain your assessment:……..
- Other regulatory changes:……
  - Please explain your assessment:….....
- Disappearance of one of the major audit firms:

- Please explain your assessment:……..

- Greater emphasis on detailed industry knowledge:…..
  - Please explain your assessment:……..
- Greater emphasis on specialised expertise of staff:…..
  - Please explain your assessment:……..
- Other:….
  - Please specify and explain your assessment……

    ……..

Question 3: How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors as barriers for audit firms other than the Big 4 to provide audit services to listed companies typically audited by one of the Big 4 audit firms?

- Audit firms are too small and lack capacity to handle audit assignments undertaken typically by large audit firms:…..
  - Please explain your assessment:…….....
- Audit firms cannot provide audit services covering many countries:….
  - Please explain your assessment:…….
- Reputation of big four audit firms:……
  - Please explain your assessment:…….
- Client switching inertia:….
  - Please explain your assessment:…….
- Audit liability risk:…..
  - Please explain your assessment:…….
- Lack of adequate audit liability insurance:….
  - Please explain your assessment:…….
- Other:….
  - Please specify, and explain your assessment…….

    ……

Question 4: Please list in the table below the different audit firms which, in 2005, provided audit and non-audit services to your company in the countries in which you operate, including through subsidiaries. Please, also specify the type of services provided by ticking the relevant box.

Audit firms employed by company, including subsidiaries, in 2004			
Home country of company	**Name of audit firm**	**Audit services**	**Non-audit services**
Other countries			

Please explain the reasons for using more than one audit firm:

……
……
……
……

Question 5: This question relates only to the choice of audit firm for the provision of audit services in a company's home country. What are in your view the main factors which determine a company's choice of provider of audit services?

……
……
……

Question 6: This question relates only to the choice of audit firm for the provision of audit services in a company's home country. How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors in selecting an audit firm?

- Size of the audit firm:….
  - Please explain your assessment:……..
- Multinational presence of the audit firm:…..
  - Please explain your assessment:……..
- Reputation of the audit firm:……
  - Please explain your assessment:……...
- Previous experience of the audit firm:….
  - Please explain your assessment:……
- Knowledge by the audit firm of the company:…
  - Please explain your assessment:…….
- Knowledge by the audit firm of the industry(ies) in which the company operates:….
  - Please explain your assessment:……..
- Previous experience by the company with audit firm:….
  - Please explain your assessment:……..
- References from others about the audit firm:….
  - Please explain your assessment:……..
- Other:…..
  - Please explain your assessment:……..

Question 7: This question relates only to the choice of audit firm for the provision of audit services in a company's home country. How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors as restrictions in obtaining the desired type of audit services? Please select one or more of the following:

- Number of audit services providers capable of meeting the firms' audit needs is too small:…
  - Please explain your assessment:……...
- There is not enough competition in the audit market:….
  - Please explain your assessment:……...
- The costs of the audit services……
  - Please explain your assessment:……...
- Lack of adequate audit liability insurance:…..
  - Please explain your assessment:……..

- Local rules governing auditor independence:……
  - Please explain your assessment:……..
- Other:….
  - Please specify and explain your assessment:……

……
……

Question 8: This question relates to the non-audit services provided by an audit firm to the company in the company's home country. Please specify in the table below which type of non-audit services, if any, were provided by your audit firm(s) in 2004 by ticking the relevant box.

Non-audit services provided by audit firm to company in 2004	
None	
Provision of financial information technology	
Internal audit	
Valuation services	
Tax services	
Litigation services	
Recruitment services	
General business management services	
Other (please specify:……)	

Question 9: This question relates to the choice of audit firm by a company in the company's home country. Who in practice chooses the audit service provider? Of interest is not the formal approval process of the auditor but who has the strongest influence on which audit firm should be nominated or proposed for appointment. Please tick one of the answers below:

- The company's management:……
- The company's CEO:…….
- The company's chairman:……
- The company's Finance Director
- The company's Board
- The Board's audit committee:…..
- The chairman of the Board's audit committee
- Other (please elaborate):……
- Please add any comments you wish to make:

……
…….

Question 10: This question relates to the choice of audit firm by a company in the company's home country. How would you rate the influence of various parties, in practice, on who to appoint as audit service provider? Please tick the relevant answer in the table below.

Influence of various groups on selection of audit firm			
	Shareholders	Creditors	Other (please specify)
No influence at all			
Minor to moderate influence			
Strong influence			

Please add any comments you wish to make:

……
……

Please also specify whether there one or several shareholders jointly own a controlling interest in the company. Please tick the relevant answer. Yes:….. No:……

Question 11: This question concerns only companies with subsidiaries. Is a group auditor undertaking the statutory audits of the mother company and all its subsidiaries? Please select on one of the following:

- Question is not relevant for the company:……
- Yes:……..
- No:……

Please add any comments you wish to make:

……
……

Question 12: It relates to the choice of audit firm for the statutory audits of subsidiaries of the company in cases where no group auditor has been appointed or a group auditor audits the accounts of only a subset of subsidiaries.

Such subsidiaries may be located in the home country of the company or abroad. Who in practice chooses the audit service provider? Of interest is not the formal approval process of the auditor but who has the strongest influence on which audit firm should be nominated or proposed for appointment. If the question is not relevant for your company, please indicate so below. Otherwise, please complete the table below:

- Question is not relevant for the company:……

Choice of audit firm of subsidiaries of company		
	Subsidiaries located in home country of company	Subsidiaries located abroad
The mother company		
The subsidiary's management		
The subsidiary's CEO		
The subsidiary's chairman		

The subsidiary's Finance Director		
The subsidiary's Board		
The audit committee of the subsidiary Board's		
o Other (please elaborate):……		

- o Please add any comments you wish to make:

……
……..

Question 13: This question relates to the choice of audit firm by a company in the company's home country. How would you rate the influence of various parties, in practice, on who to appoint as audit service provider? Please tick the relevant answer in the table below.

Influence of various groups on selection of audit firm			
	Shareholders	Creditors	Other (please specify)
No influence at all			
Minor to moderate influence			
Strong influence			

Please add any comments you wish to make:

……
……

Please also specify whether there one or several shareholders jointly own a controlling interest in the company. Please tick the relevant answer. Yes:….. No:……

Question 14: This question relates only to the choice of audit firm for the provision of audit services in a company's home country. How many years has your current audit firm served as your auditor? Please tick one of the following in the table below.

Number of years current auditor has served as auditor of the company	
1 to 3 years	
4 to 6 years	
7 to 10 years	
11 to 15 years	

More than 15 years	

Question 15: This question relates only to the choice of audit firm for the provision of audit services in a company's home country. Please specify the year (over the last ten years) when the company ran the last formal procurement/tender process, if any, for the provision of audit services. If no formal procurement/tender process was undertaken over the last 10 years, please tick the relevant answer and explain why this is the case.

Year:……..

No formal procurement/tender process over the last 10 years:…….

Reason for not running a formal procurement/tender process:……..

……
……
……

Question 16: If the company changed its provider of auditing services over the last six years, what were the reasons for doing so? Please select one or more of the following potential reasons:

- Regulatory requirement (such as statutory rotation, etc):……
- Resignation or failure to seek re-appointment by audit firm:…
- Appointment of a group auditor:…
- Company merger or take-over:……
- Conflict of interest of audit firm
- Unsatisfied with quality of audit work of incumbent audit firm:…
- Different opinions regarding the financial statements and the company's reporting strategy:….
- Not enough "advisory suggestions" from incumbent audit firm:….
- Audit fees of incumbent too high relative to fee rates of competitors:…..
- Advisory fees of incumbent too high relative to fee rates of competitors:…..
- Firm policy of regular rotation of audit firm:…
- New policy to procure separately audit and advisory services:…..
- Changing needs of the company as a result greater international presence:….
- Changing needs of the company as a result of a change in or development of new activities
- Logistical issues (nearness of the audit office, etc):….
- Views of the investors:……..
- Other (please specify):……..

Question 17: If the company changed audit service provider over the last six years, which of the following situations applied. Please identify first whether the change was as a result of the demise of Arthur Andersen and then tick the relevant situation:

- Change necessary because of the demise of Arthur Andersen. Yes:……No:…….

The change was from:

- A Big 5/4 audit firm to another Big 4 audit firm:……
- An audit firm outside the Big 5/4 audit firms to a Big 4 audit firm:…..
- An audit firm outside the Big 5/4 to another audit firm outside the Big 4 audit firms:…….
- A Big 5/4 audit firm to an audit firm outside the Big 4 audit firms:…..

Please add any comments you wish to make:

……
……..

Question 18: Is the company using currently the audit services of one of the top four firms? Please tick one of the following:

- No: ….
- Yes: ….

Question 19: If the answer to the previous question is "Yes", would the company be prepared to use the services of an audit firm that is not among the top four? Please tick one of the following:

- No: ….
- Yes: ….
- If the answer to present question is no, please state below the reasons for not being prepared to switch to an audit firm outside the top four.

  ……
  ……...

Question 20: Did the company encounter a situation where it approached an audit firm for the supply of audit services and the audit firm refused to take on this assignment? Please tick relevant answer below:

- Yes:……
- No:……..
- If the answer is "Yes", please specify the year(s) when this happened and choose one or more of the following reasons:

  Year(s):……..

  Reasons:

  - Regulations relating to independence:……
  - Concerns about scope to undertake audit objectively:…….
  - Audit risk related to the characteristics of the industry in which the company operates:….
  - Audit risk related to the characteristics (other than financial situation) of the company itself:…….
  - Financial situation of the company:…….
  - Conflicts of interest
  - Other (please specify):……..

  Please add below any comments which you may wish to make:

  ……
  ……..

Question 21: How do you rate the likelihood of M&A among small and medium-sized audit firms in each of the EU Member States and on a pan-European scale over the next three years? Please select tick one the following "low", "average" and "high" in the table below. Complete the information only for the countries of which you have specific knowledge.

Likelihood of M&A among small and medium-sized audit firms			
Country	Likelihood		
	Low	Average	High

Please elaborate on the reasons underlying your answer(s):

……
……
……

Question 22: Please identify below the major obstacles to mergers between small and medium-sized audit firms within national markets:

- Non-regulatory obstacles (please elaborate)

  :……
  ……..

- Regulatory obstacles (please elaborate)

  :……
  ……

- Legal obstacles (please elaborate)

  :……
  ……..

- Structural obstacles (such as the organisation of audit firms as partnerships) (please elaborate)

  ……
  ……..

Question 23: Please identify below the major obstacles to mergers between small and medium-sized audit firms across national markets within the EU:

- Non-regulatory obstacles (please elaborate)

  :……
  ……

- Regulatory obstacles (please elaborate)

  :……
  ……

- Legal obstacles (please elaborate)

  :……
  ……..

- Structural obstacles (such as the organisation of audit firms as partnerships) (please elaborate)

  :……
  ……..

Section III Economic impact of alternative auditors' liability regime

Question 24: Please list below the factors that the company would take into consideration when judging the quality of the audit service being provided.

Examples of quality factors include, among others, the demonstration of industry-specific knowledge, the demonstration of technical knowledge, the responsiveness of the audit firm to address specific accounting and audit-related questions, the identification of potential internal-control weaknesses, the identification of errors or mis-statements in the company's financial statements, the compliance with internal financial reporting deadlines, the use of appropriately trained personnel, etc.:

Main quality factors:

- ……
- ……
- ……
- ……

Question 25: To what extent are you satisfied with the conduct of the audit work performed by your statutory auditor? Please select one of the following;

- Not satisfied at all:……
- Somewhat satisfied:…..
- Satisfied:….
- Very satisfied:….

Question 26: If you responded somewhat satisfied or not satisfied at all, please give below the reasons for such a rating of the quality of audit services:

……
……

……

Question 27: Does the company observe that the level of audit fees varies positively or negatively with the size of the audit service provider. Please tick relevant answer below:

- Yes positively:……
- Yes negatively:……
- No:……..
- Please add any comments you wish to make:

  ……
  ……

Question 28: Does the company believe that the audit fees contain an uninsured risk premium, perhaps for auditor liability reasons. Please tick relevant answer below:

- Yes:……
  - If the answer is "Yes", is the risk premium likely to be too high, at the appropriate level or too low? Please tick one of the following:
    - Too High:……

- Appropriate:…..
- Too low:….

- No:……..

Please add any comments you wish to make:

……
……

Question 29: Liability insurance bought by audit firms covers both audit and non-audit services. In the company's view, how do audit firms aim to recover the liability insurance premiums across audit and non-audit fees? Please tick relevant answer below:

- Liability insurance premiums are fully reflected in fees for audit services and not all in fees for non-audit services:……
- Liability insurance premiums are mainly reflected in fees for audit services and only marginally in fees for non-audit services:……..
- Liability insurance premiums are about equally reflected in fees for audit services and non-audit services:……..
- Liability insurance premiums are only marginally in fees for audit services and mainly in fees for non-audit services:……..
- Liability insurance premiums are not at all reflected in fees for audit services and fully in fees for non-audit services:……..

Please add any comments you wish to make:

……
…….

Question 30: Are financial results audited under a regime of limited auditor liabilities viewed by capital markets as different in terms of providing a less true and fair view than similar results audited under a regime of unlimited liability? Please select one of the following:

- They provide a less true and fair view:….
- They provide a somewhat less true and fair view:…..
- No impact:…..
- They provide a somewhat more true and fair view:…..
- They provide a more true and fair view:…..

Please add any comments you wish to make:

……
…….

Question 31: If your answer to the previous question is "Yes", in your view, does this raise the cost of capital for firms audited under a regime of limited liabilities relative to a firm whose results are audited under a regime of unlimited liabilities? Please select one of the following:

- Yes:……
- No:……..
- Please add any comments you wish to make:

  ……
  …….

Section IV Likely short-term and long-term effects of the possible disappearance of one or more of the Big-4 firm audit firms

Question 32: If one of the Big 4 audit firm were to collapse, what do you believe would happen in the short term (e.g., within 1 year) to its listed audit clients? Please tick the relevant answer:

- o Clients would move exclusively to the remaining large audit firms:……
- o Clients would move mainly to the remaining large audit firms with some moving to middle-tier firms:……
    - Please provide the proportion in () of clients that you would expect to move middle-tier firms:…….
- o Clients would move mainly to middle-tier audit firms with some moving to the remaining large audit firms:…..
    - Please provide the proportion in () of clients that you would expect to move middle-tier firms:…….
- o Clients would move exclusively to the middle-tier audit firms

Please add any comments you wish to make:

……
……
……

Question 33: If one of the Big 4 audit firm were to collapse, on a scale of 1 (very unlikely) to 5 (very likely), how likely are following issues in the short term (e.g., within 1 year):

- o Listed companies in higher-risk industries will be unable to find a large audit firm willing to undertake the audit:…..
- o Listed companies in higher-risk industries will be unable to find any audit firm willing to undertake the audit:……

Please add any comments you wish to make:

……
……
……

Question 34: If one of the Big 4 audit firm were to collapse, what do you believe would happen over the medium term (more than 1 year and less than 6 years after the collapse) to their listed audit clients? Please tick the relevant answer:

- o Clients would move exclusively to the remaining large audit firms:……
- o Clients would move mainly to the remaining large audit firms with some moving to middle-tier firms:……
    - Please provide the proportion in () of clients that you would expect to move middle-tier firms:…….
- o Clients would move mainly to middle-tier audit firms with some moving to the remaining large audit firms:…..
    - Please provide the proportion in () of clients that you would expect to move middle-tier firms:…….
- o Clients would move exclusively to the middle-tier audit firms

Please add any comments you wish to make:

……
……
……

Question 35: If one of the Big 4 audit firm were to collapse, how likely on a scale of 1 (very unlikely) to 5 (very likely) are the following issues over the medium term (e.g., more than 1 year and less than 6 years after the collapse):

- Listed companies in higher-risk industries will be unable to find a large audit firm willing to undertake the audit:…..
- Listed companies in higher-risk industries will be unable to find any audit firm willing to undertake the audit:……

Please add any comments you wish to make:

……
……
……

Question 36: In the case of a disappearance of one of the Big 4 audit firms, how likely would you rate on scale of 1 (very unlikely) to 5 (very likely) the probability that middle-tier audit firms will be capable and willing to audit the clients of the Big 4 audit firm which disappeared. Please provide an answer for both the short term (e.g., within 1 year) and medium term (more than 1 year and less than 6 years after the collapse):

Short term:….. Medium term:……

Please provide the reasons for your answer:

……
……
……

Question 37: What other consequences would the disappearance of one of the Big 4 audit firm have? Please distinguish between short-term effects (e.g., within 1 year) and medium-term effects (more than 1 year and less than 6 years after the collapse).

……
……
……
……

Section V Insurance market for statutory audit

Question 38: What impact would a public auditor oversight body overseeing independently the audit quality assurance system have on quality? Please tick one of the following and provide your reasons below:

- o Will greatly improve quality:…..
- o Will improve somewhat the quality:…..
- o Will have no impact on quality:…..
- o Will result in somewhat lower quality:…..
- o Will result in lower quality:…….

Reasons:……
……
……
…….

Question 39: Would a public auditor oversight body overseeing the audit quality assurance reduce the audit liability risk? Please tick one of the following and provide your reasons below:

- o Will reduce the audit liability risk:…..
- o Will reduce somewhat the audit liability risk:….
- o Will have no impact on the audit liability risk:…..
- o Will increase somewhat the audit liability risk:…..
- o Will increase the audit liability risk:…….

Reasons:……
……
……
…….

Annex 4 Questionnaire to institutional investors

Economic impact of auditors' liabilities

Questionnaire to institutional investors

Notes to the questionnaire

General information

This questionnaire is divided in five different sections:

- The first section seeks information about the survey respondent;
- The second section addresses the issue of the economic impact of alternative auditors' liability regime;
- The third section seeks views on the impact of a public auditor oversight body;
- The fourth section focuses on the state of the market for audit firms located in the EU.

Audit services: In this questionnaire, audit services always refer to statutory audit services. A statutory audit involves carrying out an audit of the annual accounts of a company (or a body of undertakings) and verifying that the annual report (annual consolidated report in the case of a body of undertakings) is consistent with those annual (consolidated) accounts when such an audit and such verification is required by law.

Section I: Identification of respondent

Name of undertaking	
Name of person completing the survey questionnaire	
Position	
Address	
Telephone number	
E-mail	

Section II Economic impact of alternative auditors' liability regime

Question 1: In your country of residence and the four EU Member States (outside your country of residence) in which you are the most active, please, please rate the overall quality of audit services by the Big 4 and the middle-tier of audit firms.

Quality of audits					
	Home country ……	Member State 1 ……	Member State 2 ……..	Member State 3 …….	Member State 4 ……..
Audits by Big 4					
Not satisfied at all					
Somewhat satisfied					
Satisfied					
Very satisfied					
Audits by middle-tier firms					
Not satisfied at all					
Somewhat satisfied					
Satisfied					
Very satisfied					

Please add any comments you wish to make:

……
……
……
……

Question 2: If you responded somewhat satisfied or not satisfied at all, please give by EU Member State the reasons for such a rating of the overall quality of audit services:

……
……
……

Question 3: Are financial results audited under a regime of limited auditor liabilities viewed by capital markets as different in terms of providing a less true and fair view than similar results audited under a regime of unlimited liability? Please select one of the following:

- o They provide a less true and fair view:….
- o They provide a somewhat less true and fair view:…..
- o No impact:…..

- They provide a somewhat more true and fair view:…..
- They provide a more true and fair view:…..

Please add any comments you wish to make:

……
……

Question 4: If your answer to the previous question is "they provide a less true and fair view" or "they provide a somewhat less true and fair view", in your view, does this raise the cost of capital for firms audited under a regime of limited liabilities relative to a firm whose results are audited under a regime of unlimited liabilities? Please select one of the following:

- Yes:……
- No:……..

Please add any comments you wish to make:

……
……

Section III Impact of a public auditor oversight body

Question 5: What impact would a public auditor oversight body overseeing independently the audit quality assurance system have on quality? Please tick one of the following and provide your reasons below:

- Will greatly improve quality:…..
- Will improve somewhat the quality:…..
- Will have no impact on quality:…..
- Will result in somewhat lower quality:…..
- Will result in lower quality:…….

Reasons:……
……
……..

Question 6: Would a public auditor oversight body overseeing the audit quality assurance reduce the audit liability risk? Please tick one of the following and provide your reasons below:

- Will reduce the audit liability risk:…..
- Will reduce somewhat the audit liability risk:….
- Will have no impact on the audit liability risk:…..
- Will increase somewhat the audit liability risk:…..
- Will increase the audit liability risk:…….

Reasons:……
……
……

Question 7: Would a public auditor oversight body overseeing the audit quality assurance lead independent insurers to increase the coverage for the liability of audit firms? Please tick one of the following and provide your reasons below:

- Will increase availability of coverage:…..
- Will increase somewhat availability of coverage:……
- Will have no impact on availability of coverage:…..

Reasons:
……
……..

Section IV State of the international market for audit firms located in the EU

Question 8: In your country of residence and the four EU Member States (outside your country of residence) in which you are the most active, please identify in the table below who in general chooses a company's audit service provider? Of interest is not the formal approval process of the auditor but who typically decides which audit firm should be nominated or proposed for appointment. Please tick one of the answers below:

Who chooses the audit service provider in practice					
	Country				
	Home country …….……	Member State 1 …….	Member State 2 ……...	Member State 3 …….	Member State 4 ……...
The firm's management					
The firm's CEO					
The firm's chairman					
The Board's audit committee					
The chairman of the Board's audit committee					
Other (please specify)……....					

Please add any comments you wish to make:

……
……..

Question 9: In your country of residence and the four EU Member States (outside your country of residence) in which you are the most active, please, please rate the typical influence of various groups on who to appoint as audit service provider?

Influence of various groups on appointment of auditor					
	Home country …….	Member State 1 …….	Member State 2 ……..	Member State 3 …….	Member State 4 ……..
Shareholders					
No influence at all					
Some minor to moderate influence					
Strong influence					
Full control					
Creditors					
No influence at all					
Some minor to moderate influence					
Strong influence					
Full control					
Third parties (please specify:…… …….					
No influence at all					
Some minor to moderate influence					
Strong influence					
Full control					

Please add any comments you wish to make:

……
……...

Annex 5 Survey details

This Annex provides detailed information about the various surveys.

First, we provide details about the survey targets and the response rates to the surveys of audit firms, companies and institutional investors.

Second, we provide the number of answers to each question of the three questionnaires.

Finally, we provide some information about the responses of the firms belonging to one of the major networks, focusing in particular on whether firms of a given network gave an identical response to a specific question. This analysis was undertaken to determine whether the survey responses of firms belonging to one of the major network yielded de facto only 1 single answer or reflected genuinely different answers.

1. Survey samples and survey response rates

Below, we present the details of the survey of audit firms, companies and institutional investors.

Survey of audit firms

The details of the audit firm survey are provided at Table 89 overleaf.

Firms belonging to the Big-4 networks as well as to all the middle-tier networks belonging to the European Group of Accounting Networks (EGIAN) were included in the survey sample. In each case, the survey questionnaire was sent to a network contact person who then circulated the questionnaire the network's members. Survey responses were either sent back to London Economics directly or via the network contact person.

In addition a number of larger independent audit firms were surveyed directly by London Economics. This additional survey run targeted 25 firms in France, 21 firms in Germany, 12 firms in Italy, 3 in the Netherlands, 10 in Sweden and 40 in the UK.

In total, 154 responses were received, of which 90 emanate from firms belonging to the Big-4 networks and 64 from middle-tier firms and a few large, independent firms.

In terms of geographical coverage, for all but two EU25 Member States, responses were received from both Big-4 and middle-tier firms. The only exception is Hungary.

Table 89: Audit firm survey and response rate

	EU Member State																									
Name of the network																										
	EU25[1]	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK
AGN International																										
Baker Tilly Int.	5	√		√	√		√		√										√							
BDO	17	√	√	√	√	√	√	√	√	√		√		√	√			√		√			√	√		√
BKR International																										
DFK International	1	√																								
Deloitte, Touche & Tomahasu	24	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√
Ernst & Young	22	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√		√	√	√	
Grant Thornton	12		√	√	√				√			√					√				√	√	√	√	√	√
Groupe Constantin																										
HLB International																										
Horwarth Int.	1								√																	
IGAF Worldwide																										

	EU25[1]	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK
KPMG	24	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√
Kreston International																										
Mazars																										
Moore Stephens International Ltd	12		√	√	√	√	√	√			√		√	√			√							√		√
Moores Rowland International	4				√ (2)						√										√					
MSI Legal & Accounting Network Worldwide	1								√																	
Nexia Europe																										
Polaris International																										
PwC	20		√	√	√	√	√	√	√	√	√	√	√		√	√		√		√	√		√	√	√	√
RSM International	4	√																	√						√	√
Russell Bedford International																										
UHY International																										
Independent audit firms[2]	6				√ (1)				√ (3)																	√ (2)
Total	153	7	7	8	11	6	7	6	12	5	6	6	5	4	5	4	5	4	3	5	6	3	6	7	6	9

Note: (1) Number of responses received by network across EU25; (2) Number of responses received from independent audit firms in each country is shown in (..)
Source: London Economics

Survey of companies

In total, survey questionnaires were sent to 2,373 companies, of which 1,889 are listed companies on a so-called regulated market within the meaning of MiFID.

For each of the EU25 Member States the survey sample includes all companies included in the main index of the main domestic stock exchange as well a random sample of other companies listed on the stock exchange. The precise number of companies surveyed in each Member State is provided in Table 90 below.

In addition, in the case of Euronext and the LSE, a number of firms listed on the "unregulated markets" (Alternext and AIM) were also surveyed.

Furthermore, to complete the survey of European companies, 484 unlisted companies with an annual turnover in excess of €500 million were also sent the questionnaire.

Finally, in light of the importance of developments in the United States, a sample 200 companies listed on the New York Stock Exchange or Nasdaq were also surveyed.

Altogether 146 completed questionnaires were received from European companies, giving a response rate of 6%. The detailed country-by-country response rates are also provided in Table 90 overleaf.

With the exception of the Czech Republic, Estonia, Cyprus, Latvia, Slovenia and Slovakia, at least one response was received from companies in each Member State.

Table 90: Number of listed and unlisted European companies surveyed and response rate

EU Member State	Number of companies surveyed			Number of responses received	
	Main stock market index/Number of companies in the index	Number of additional companies surveyed	Total	Questionnaire returned	Declined to answer
BE	BEL20/19	43	62	12	
CZ	PX/9	29	38	0	2
DK	OMXC20/18		64	4	
DE	DAX/30	156	186	15	1
EE	Main List /5	10	15	0	
EL	Athex 20/20	30	58	4	
ES	Ibex35	43	78	6	1

FR	CAC40	111	151	12	
IE	ISEQ®20/20	18	38	3	
IT	S&P MIB/20	98	118	8	1
CY	FTSECySE20/19	21	30	0	
LV	Main List/5	39	44	1	
LT	OMX Vilnius Index/21	21	42	1	1
LU	LuxX/8	12	20	2	1
HU	BUX/11	33	44	2	1
MT	All companies/15		15	1	
NL	AEX-Index/23	53	86	12	2
AT	ATX/22	36	58	5	3
PL	WIG20/20	31	51	4	
PT	PSI20/20	32	52	8	1
SI	SBI20/15	14	29	0	
SK	SAX/5	15	20	0	
FI	OMX25/25	32	57	6	1
SE	OMX Stockholm30/	36	66	12	1
UK	FTSE100/100	367	467	25	10
Unlisted companies		484 with annual turnover >€500m		3	
Total		2373		146	26

Source: London Economics

Survey of institutional investors

In total, 250 questionnaires were sent to institutional investors in a number of EU Member States and the United States. The precise number of questionnaires sent to such institutional investors in each Member State is provided at Table 91.

In total 31 responses have been received yielding a response rate of 12.4%.

Table 91: Number of institutional investors surveyed and response rate

EU Member State	Number of institutional investors surveyed	Number of responses received as of 20/4/2006	
		Questionnaire returned	Declined to answer
BE	10	2	
CZ	12		
DK	10	2	
DE	25	3	
EE			
EL			
ES	20	2	
FR	20	3	
IE	13	2	
IT	20	2	
CY			
LV			
LT			
LU			
HU	10	1	
MT			
NL	10	2	
AT	5		
PL	10	1	
PT	5		
SI			
SK			
FI	10	1	

SE	15	2	
UK	35	8	1
USA	20	0	
Total	250	31	1

Source: London Economics

2. Number of responses for each question of the questionnaires

In the tables below we provide the number of responses received for each question. The audit firm survey responses are reported in Table 92, the company survey responses are reported in Table 93 and those of institutional investors in Table 94.

Overall, the response rate is high for practically all the questions.

Table 92 Number of responses to individual questions in audit firm questionnaire

Number of questionnaires completed:			**154 of which 90 from Big-4 firms and 64 from middle-tier firms**		
Questionnaire question	**Number of responses**		**Questionnaire question**	**Number of responses**	
	Big-4	**Middle-tier**		**Big-4**	**Middle-tier**
1	90	63	*18*	88	59
2	85	64	*19*	86	59
3	90	64	*20*	85	58
4	86	62	*21*	11	11
5	90	48	*22*	73	45
6	82	44	*23*	74	51
7	71	50	24	72	54
8	72	47	*25*	74	51
9	89	64	*26*	76	54
10	45	26	*27*	64	46
11	66	36	*28*	26	41
12	53	48	*29*	48	44
13	63	57	*30*	75	37
14	28	54	*31*	62	28
15	42	42	*32*	46	38
16	90	60	*33*	77	52
17	89	60			

Source: London Economics survey of audit firms

Table 93 Number of responses to individual questions in company survey questionnaire

Number of questionnaires completed:		**146**	
Questionnaire question	**Number of responses**	**Questionnaire question**	**Number of responses**
1	146	*21*	141
2	141	*22*	141
3	146	*23*	141
4	129	*24*	146
5	129	*25*	129
6	141	*26*	111
7	129	*27*	129
8	102	*28*	114
9	117	*29*	123
10	138	*30*	132
11	146	*31*	48
12	96	*32*	135
13	108	*33*	129
14	135	*34*	138
15	125	35	129
16	35	36	135
17	51	37	
18	132	38	
19	126	39	
20	141		

Source: London Economics survey of companies

Table 94 Number of responses to individual questions in institutional investors survey questionnaire

Number of questionnaires completed		**26**	
Questionnaire question	**Number of responses**	**Questionnaire question**	**Number of responses**
1	15	*6*	25
2	5	*7*	25
3	31	*8*	15
4	31	*9*	15
5	20		

Source: London Economics survey of institutional investors

3. Analysis of the responses of the Big-4 and top 2 middle-tier networks

In the tables below, we provide a detailed analysis of the variation in the responses from a given network. To preserve the anonymity of the responses received by London Economics, each of these 6 major networks is identified by an alphabetical letter in the tables below and the listing order of the networks in the tables was established on the basis of a random draw.

As noted earlier, the key issue of interest is whether firms belonging to a given network have provided an identical response to a specific question. If this were the case, the number of "real" responses would be much lower than the number of responses received.

To assess the prevalence of "common network responses", we report below for each question the standard deviation of the responses of a network's firms to a particular response. A standard deviation of zero means that the answers are all identical.

Such occurrences of zero standard deviation are shown by shaded cells in the tables below for the cases where the responses to a given question are strictly identical and more than one response was received from a network.

It is important to note that a lack of response variation across a given network does not imply necessarily that the responses were coordinated by the network. It is possible that firms of a given network hold genuinely the same views about a specific issue.

Table 95: Question 1 - How do audit firms compete? Please rate on a scale of 1 (least important) to 5 (most important) the following competition factors. Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1	0.8	0	1.2	0.9	1.1	0.9
2	1.0	0.4	0.9	1.0	0.9	1.0
3	1.2	0.2	1.0	1.1	1.3	0.8
4	1.4	0.2	1.0	1.1	0.9	0.8
5	1.3	0.9	1.2	1.1	1.2	1.1
6	1.2	0.3	1.1	0.9	0.9	1.0
7	0.8	0.2	0.9	1.1	1.1	0.7
8	1.0	0.7	1.2	1.2	1.0	1.0
9						

Table 96: Question 2 - How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors as having contributed to increased concentration? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1	0.3	0.3	1.0	1.1	1.0	1.2
2	0.6	0.2	1.0	1.3	1.0	1.1
3	0.6	0	1.2	1.4	1.3	1.0
4		0.2	0.7	1.0	1.0	0.6
5	0.6	0.7	1.6	1.0	1.2	1.2
6	0.6	0.2	1.4	1.5	1.5	1.2
7		0.2	1.6	1.6	1.1	1.3
8		0.2	1.3	1.0	1.0	0.9
9		0.2	1.2	1.1	1.2	0.5
10		0.3	0			

Table 97: Question 3 - How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors as barriers for audit firms other than the Big 4 to provide audit services to listed companies typically audited by one of the Big 4 audit firms? Standard deviations of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1	0.6	0.5	1.1	1.0	1.1	0.8
2	0.3	0.5	1.1	0.9	1.0	1.2
3	0.6	0	0.7	1.1	1.0	0.7
4	0.3	0.3	0.9	1.1	1.0	0.8
5	0.6	0	1.1	1.2	1.5	1.1
6	1.2	0	1.5	1.4	1.4	1.1
7						

Table 98: Question 5 - This question relates only to the choice of audit firm for the provision of audit services in a company's home country. How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors in selecting an audit firm? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1		0.3	1.1	1.0	0.9	0.9
2		0.7	0.7	1.0	1.3	1.3
3		0.4	0.6	0.8	0.8	0.7
4		0.4	1.2	1.0	0.8	0.6
5		0.6	0.7	0.8	0.7	0.8
6		0.3	1.2	1.0	1.2	0.9
7		0.2	1.0	0.8	0.8	1.0
8		0.3	0.9	1.1	1.0	0.9
9				0.5	0.4	1.0

Table 99: Question 6 - This question relates only to the choice of audit firm for the provision of audit services in a company's home country. How important (on a scale of 1 (least important) to 5 (most important)) do you rate the following factors as restrictions in obtaining the desired type of audit services? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1			1.3	1.6	1.3	1.3
2			1.2	1.0	1.0	0.6
3		1.7	1.1	1.2	1.4	1.4
4			0.5	1.1	1.1	0.7
5		0.8	1.2	1.3	1.3	1.1
6						

Table 100: Question 7 - How many companies did the audit firm acquire as new audit clients over the last six years? Please provide separate answer for listed and non-listed companies. Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1	23.52	11.5	29.3	8.4	54.5	12
2	424.3	753.7	781.7	200	2618.3	0

Table 101: Question 8 - How many listed companies did the audit firm loose as existing audit clients over the last six years? Please provide separate answer for listed and non-listed companies. Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1	12.7	7.2	7.8	4.8	15.8	10.8
2		585.4	289.3	57.9	1318.7	0

Table 102: Question 9 - In your view, how important were the following factors in having led clients to change from another audit service provider to you. Please rate the following factors on a scale of 1 (not important) to 5 (very important): Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1	1.3	1.1	1.5	0.6	1.2	1.1
2	1.0	0.2	1.2	1.4	1.0	0.8
3	1.4	1.4	1.2	0.9	1.3	1.0
4	1.7	0.5	1.4	0.9	1.1	1.0
5	1.4	0.2	1.4	0.8	0.9	0.7
6	1.3	1.1	1.7	1.1	1.4	1.2
7	1.1	0.4	0.8	0.8	0.7	1.1
8	1.1	0.5	1.2	1.0	1.0	1.0
9	0.9	0.6	1.2	1.0	1.3	1.1
10	1.2	0.2	1.2	0.5	0.7	1.0
11	1.0	0.3	1.1	1.4	1.0	0.9
12	0.8	0.4	1.2	0.9	1.0	1.1
13	1.2	0.9	0.8	1.1	1.1	1.2
14	0.8	0.9	0.9	1.3	1.0	1.2
15	0.8	0.2	0.5	0.3	0.6	0.6
16	1.4	0	1.1	1.1	1.1	1.0
17						

Table 103: Question 13 - Liability insurance bought by audit firms covers both audit and non-audit services. In the company's view, how do audit firms aim to recover the liability insurance premiums across audit and non-audit fees? Standard deviation of responses from individual networks

	Network					
	A	B	C	D	E	F
Overall	0.5		0.6	0.7	0.6	0

Table 104: Question 14 - the standard audit charge-out rate contain different loadings for insurance/risk cover in countries with some form of limited liability (capped or proportional)? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall	0.3	0.6	0.6	0.4	0.3	

Table 105: Question 15 - How important do you rate the following factors as having contributed to increased concentration? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall		0.7	0.6	0.7	0.9	0.5

Table 106: Question 16 - Does the level of audit fees charged for statutory audits vary with the riskiness (in terms of potential liability and reputation) of the assignment? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall	0.5	0	0.4	0.3	0.4	0.5

Table 107: Question 17 - In your view, does the competition in the market for statutory audits limit the scope for charging risk-reflective audit fees. Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall	0.3	0	0.4	0.3	0.4	0.5

Table 108: Question 18 - Does a severe liability regime make it more difficult to attract talented people into the audit profession? By severe regime we mean a regime of unlimited liability or a regime with very high liability limits. Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall	0.5	0.3	0.5	0.4	0.5	0.3

Table 109: Question 19 - Does a severe liability regime make it more difficult to retain professional personnel with a view to them becoming partners? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall	0.5	0.2	0.5	0.2	0.4	0.2

Table 110: Question 20 - Are financial results audited under a regime of limited auditor liabilities viewed by capital markets as different in terms of providing a less true and fair view than similar results audited under a regime of unlimited liability? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall	0	0	0.6	0	0.2	0

Table 111: Question 21 - If your answer to the previous question is "Yes", in your view, does this raise the cost of capital for firms audited under a regime of limited liabilities relative to a firm whose results are audited under a regime of unlimited liabilities? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall			0.5	0.6	0.4	

Table 112: Question 22 - If one of the Big 4 audit firm were to collapse, what do you believe would happen in the short term (e.g., within 1 year) to its listed audit clients? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall		0.3	0.4	0.4	0.5	0.5

Table 113: Question 23 - If one of the Big 4 audit firm were to collapse, on a scale of 1 (very unlikely) to 5 (very likely), how likely are following issues in the short term (e.g., within 1 year). Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1	0.3	0.6	1.4	1.1	1.3	1.2
2	0.3	0.7	1.0	0.9	0.9	1.3

Table 114: Question 24 - If one of the Big 4 audit firm were to collapse, what do you believe would happen over the medium term (more than 1 year and less than 6 years after the collapse) to their listed audit clients? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall	0	0.3	0.4	0.3	0.5	0.5

Table 115: Question 25 - If one of the Big 4 audit firm were to collapse, how likely on a scale of 1 (very unlikely) to 5 (very likely) are the following issues over the medium term (e.g., more than 1 year and less than 6 years after the collapse). Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1	0.3	0.5	1.4	0.9	1.0	1.2
2	0.6	0.5	0.9	1.0	1.0	1.2

Table 116: Question 26 - In the case of a disappearance of one of the Big 4 audit firms, how likely would you rate on scale of 1 (very unlikely) to 5 (very likely) the probability that middle-tier audit firms will be capable and willing to audit the clients of the Big 4 audit firm which disappeared. Please provide an answer for both the short term (e.g., within 1 year) and medium term (more than 1 year and less than 6 years after the collapse). Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1	0.6	0.5	1.0	0.9	1.0	0.9
2	0.6	0.5	0.5	1.0	0.9	0.8

Table 117: Question 28 - Please provide below details of your liability insurance. Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
1			15.2	17.3	0.3	50.0
2			21.8	7.2	0.5	86.4
3			0.4	0.5	0.4	0.4
4			0.4	0.5	0.4	0.5
5			1493.4	26.5	84.2	783.5

Table 118: Question 29 - Does the liability coverage currently provided by your independent insurer meet the level of coverage you would wish to have from independent insurers? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall		0.5	0.4	0.4	0.5	0.5

Table 119: Question 31 - What impact would a public auditor oversight body overseeing independently the audit quality assurance system have on quality? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall	0.6	0	0.6	0.4	0.5	0.6

Table 120: Question 32 - Would a public auditor oversight body overseeing the audit quality assurance reduce the audit liability risk? Standard deviation of responses from individual networks

Sub-part	Network					
	A	B	C	D	E	F
Overall	0.8	0	0.5	0.5	0.4	0.8

Table 121: Question 33 - Would a public auditor oversight body overseeing the audit quality assurance lead independent insurers to increase the coverage for the liability of audit firms? Standard deviation of responses from individual networks

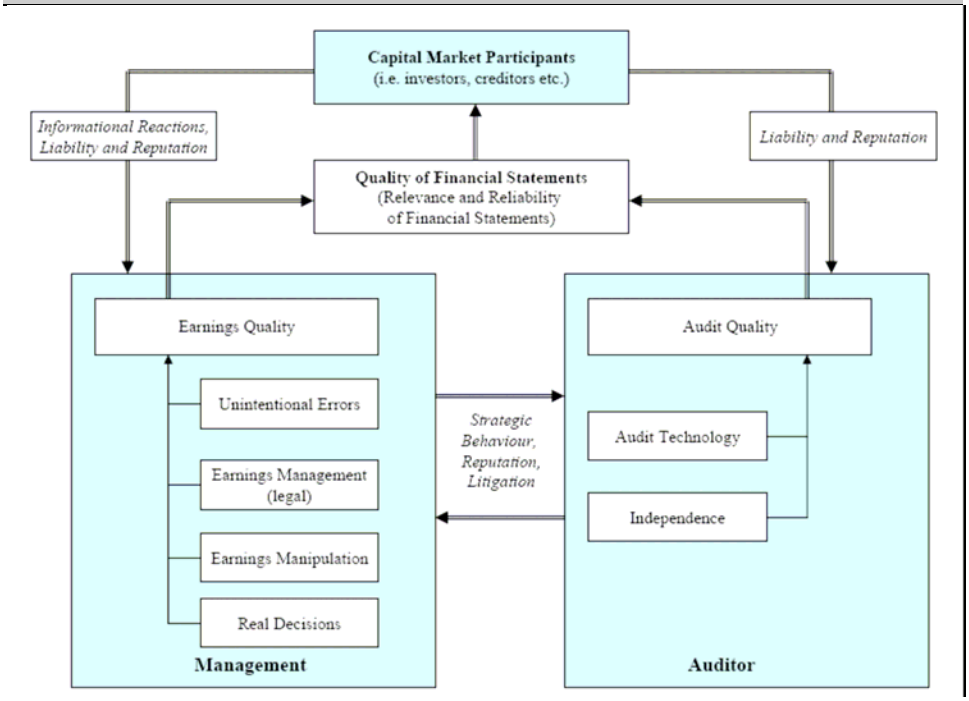
Sub-part	Network					
	A	B	C	D	E	F
Overall	0.5	0	0.7	0.3	0.2	0.5

Annex 6 Economic effects of auditor liability

Unfolding the problem

The designer of a system of auditor liability must consider its effect on various parties and the relationships between them. The nature of the liability regime will determine each player's optimal strategy and thus the outcomes of the auditing system. To structure and clarify our thinking about auditor liability, we set out the main parties and the possible relationships between them in Figure 8 below.

Figure 8: Auditor liability and relationships between main parties



Source: Ewert

To explain the various interactions depicted in Figure 8, notice that from an economic perspective, one of the goals of an auditor liability system is to "efficiently" increase the quality of the financial statements by improving their relevance and reliability. This quality is not determined by simply applying a set of accounting standards to record the financial aspects of a company's real decisions. First, the earnings statements may contain

unintentional errors that result from an inappropriate application and/or interpretation of the accounting standards. In addition, these standards will require the exercise of professional judgement and may contain several options for managers to recognize and/or value the assets and liabilities which gives rise to a degree of permissible earnings management. Finally, company managers may be inclined to misrepresent their company's situation by manipulating earnings in order to increase their compensation. Hence, the basic quality of earnings is largely determined by the ways in which company managers choose to interpret and apply accounting standards.

The role of auditing is to give credibility to the financial statements by providing reasonable (but not absolute) assurance that material unintentional errors and earnings manipulations are detected and corrected. The auditor's task is to ensure that the state of a company's business affairs as recorded in the financial statements has been computed based on a reasonable interpretation of prevailing accounting standards. To fulfill this role the auditor has to employ an audit methodology suitable for the respective situation to check whether the proposed financial statements are a fair representation of the underlying facts. In the case of errors (intentional or not), he should first influence the company's management to correct the statements, otherwise he has to include his negative findings into his audit report (i.e., issue a qualification), which in extreme cases may lead to either an adverse opinion or a disclaimer of any opinion on the financial statements. The auditor's reporting decisions are influenced by his degree of independence, which is defined in the literature as the conditional probability that the auditor will report errors given that he has found some. Notice, however, that if an auditor plans to not issue an adverse opinion even if it would be necessary, he has little incentive to audit thoroughly in the first place (and auditing activities are usually not observable to other parties). Hence, the use of an appropriate audit methodology in the first instance is also influenced by the auditor's approach to independence, and the assurance eventually provided through auditing depends on the auditor's optimal policy.

Even if only the company manager and the auditor are considered, their optimal decisions are dependent on each other. The auditor has to form conjectures about the basic quality of the company's earnings to adapt the extent of auditing to the assumed error rate, and the manager decides about his (legal and illegal) earnings management (which affects the error rate) by forming expectations of the auditor's policy and his independence. An auditor's desire to preserve his own reputation as well as that of the audit firm with which he is associated is another factor in the formation of these expectations, and it is reasonable to assume that, in most cases, an auditor will work hard and not give in to potential client pressure so as to preserve such a reputation. Furthermore, allowing the manager to sue the auditor may prevent the auditor from biasing his activities in the direction of capital market participants. On the other hand, the auditor's policy can be influenced

by his conjectures regarding his reappointment should he issue an adverse opinion.

The set of interdependencies is enlarged by including the participants in the capital market as the actual addressees of the financial statements. Investors and creditors form conjectures about the optimal policies of managers and auditors (i.e., about the results of the "auditor-manager-subgame") and assess the relevance and reliability of the financial statements accordingly. This leads to revised market prices of the company's shares and possibly modified conditions for debt issues. In turn, these reactions are among the basic arguments for managers to manipulate earnings. Thus, the reactions of the market provide incentives and determine the basic earnings quality, which at the same time has an impact on the earnings´ relevance and reliability which in turn influence the market's behaviour. The response of the market is also dependent on the reputation of managers and auditors. If the market estimates a high probability that the manager and/or the auditor always refrain from opportunistic behaviour, then the quality of the financial statements will be assessed higher, leading to a more pronounced price response.

After publication of the financial statements, the market may receive some information that these statements contain errors. Investors may then decide to sue either the auditor or the company management, or both. Whether such litigation occurs depends on the net benefits for investors that in turn depend on the liability system (as is discussed in more detail below). Hence, investors will normally not always sue the auditor and/or the management after having received some signals indicating potential errors in the financial statements. In addition to the considerations already mentioned above, the manager and the auditor have to form conjectures regarding the suing behaviour of the market and the resulting probability of a trial, and according to these conjectures they choose their optimal policies respectively. In this framework, the threat of being sued is one of a number of basic incentive devices for delivering correct earnings and an acceptable level of auditing. Notice that a rational market includes the potential damage payments to be received from successful litigation in the cash flows that are discounted to arrive at the company's market price. This implies that there is a repercussion of auditor liability on the company's market price, which gives incentives for the manager to manipulate earnings, which affects the basic earnings quality and the auditor's policy.

In the end, there is a complete interdependence of all conjectures and actions, and this is moderated and influenced by the system of auditor liability. A comprehensive assessment of the effects of auditor liability on the equilibrium outcome of the above scenario has in principle to take into account all possible relationships and interdependencies that may occur and may influence each other in a market context. In addition, it should have become clear from the above discussion that any system of auditor liability unfolds its effects not in isolation but in combination with other factors like reputational effects and the liability rules for managers. Moreover, in order to

keep Figure 8 intelligible, we have omitted some relevant elements from it. Among these are:

- Oversight Boards (such as the new German "Financial Reporting Enforcement Panel") that may perform an additional check of the financial statements in a purely random fashion or in response to some specific information concerning potential errors;
- Corporate audit committees that may curb the incentives of managers for aggressive earnings management by effectively monitoring the accounting processes;
- The existence of liability insurance for auditors (and managers) and the market for such insurance.

During the last 20 years, many conceptual (and mainly formal) analyses have studied various aspects of the above network of interdependencies. It is neither possible nor meaningful to review all these articles (which are contained in the list of references) and their results in detail. There is no common approach in these studies, they are often technically very different, and there is no study that captures the entire network shown above. Hence, each study concentrates on certain parts of the whole picture, but viewed in total one can gain some general insights about important ingredients for a reasonable structure of a system for auditor liability. The remainder of this annex groups these studies according to the subjects that also seem topical in the debate about the design of auditor liability systems, showing the main thrust of the arguments and the central results and implications. The grouping consists of the following themes:

- Strict liability versus negligence
- Joint and several liability versus proportionate liability
- Extent of auditor liability (size, caps, etc.)
- Effects of liability insurance for auditors
- Effects of complementary factors other than liability that may have an impact on the behaviour of the auditor in addition to liability (e.g., reputation, professional sanctions, oversight mechanisms etc.).

Results of the conceptual auditing research

Preliminaries

As a general preliminary remark, it is useful to first clarify the meaning of the term "efficiently", which was used to characterize the aim of auditor liability following Figure 8. In studying the effects of auditor liability rules, one might be tempted to concentrate solely on the impact of liability on the extent and quality of auditing itself (i.e., how does a certain rule change the incentive for auditors to exercise a certain audit effort etc.). However, this is only part of the entire problem, which has to be viewed from a broader economic

perspective. The role of financial reporting is to enhance the ability of the capital markets to direct the funds to profitable investments and to enable investors and potential investors to make informed portfolio decisions. But increasing the relevance and reliability of financial statements is not advantageous at any price. As far as auditing is concerned, higher audit efforts may improve the informational content of published earnings, but they are costly at the same time. From a social welfare perspective, higher quality financial statements are only justified so long as the resulting benefits (due to better investment and portfolio decisions in the economy) outweigh the additional auditing costs. Admittedly, it is almost certain that this message is difficult to implement in reality, but the trade-off nevertheless exists and should at least in principle be taken into account (which is also done in many of the research articles that are to be discussed below). Hence, in a broad economic perspective, the following aspects should be considered in the evaluation of auditor liability rules:

a) The benefits and costs from auditing activities as discussed above.

b) Auditor liability is one of a number of tools to encourage a desired level of financial statement quality. It works through the threat of litigation and exposes auditors to liability payments that have to be paid to plaintiffs in the case of a lost case. Thus, it operates by means of the judicial system and accordingly causes costs for the parties and institutions involved therein (e.g., courts, lawyers, expert witnesses etc.). These costs have also to be taken into account in deciding about the efficiency and effectiveness of an auditor liability system.

c) In addition, from a theoretical standpoint, plaintiffs have eventually to pay for the "insurance" that they get from the liability system. No auditor is forced to accept a mandate, and he will do so only if it is ex-ante profitable for him. The expected liability payments (and, strictly speaking, also the expected legal costs borne by the auditor) become part of his calculation and the auditor will adjust the price for his services accordingly in order to reach at least his reservation utility. [77] Hence, investors who expect to collect damage payments in case of a successful trial against the auditor have to pay ex-ante for these payments through a higher audit fee.

Taken together, these aspects strengthen the claim that there should be (whenever possible) a comprehensive cost-benefit-trade-off for an auditor liability system. Investors have to pay ex-ante not only for excessive liability payments (point (c) above) but also for additional audit costs that result from

[77] That audit fees are adjusted for expected litigation risk is empirically documented in Simunic/Stein (1996) for the US-market. For European countries, Niemi (2002) documents the existence of risk premiums in audit fees for the audit market in Finland, and Cameran (2005) finds significant relationships between audit fees and audit risk in the Italian audit market. More recently, Hay/Knechel/Wong (2006) conducted a statistical meta-analysis of 147 empirical audit-fee studies worldwide and concluded that there is a significant and positive relationship between risk and audit fees.

the auditor's optimal adjustment of his services due to the liability rules. Hence, the remaining advantages are better investment and portfolio decisions that are enabled by an improved quality of financial reporting, and these benefits have to outweigh additional audit costs in order to justify, say, a stricter liability system.

As an additional remark, almost all models that are discussed below assume a given audit fee if it comes to analyzing the auditor's efforts. That is, the price for audit services may ex-ante (at the stage of negotiating the audit contract) depend on everything that the parties expect to occur during the audit process, but after the contract has been accepted by the auditor the fee is fixed, subject to any unforeseen problems or delays (for which the company is entirely responsible) that require additional audit effort, and does not depend on the actual audit effort (because it is not observable) or the earnings of the client (because contingent fees are not allowed). It then follows that the auditor essentially acts as a cost-minimizer in deciding about his actions after acceptance of the contract. That is, he strives to minimize total audit costs, which consist of the direct cost for the audit and the losses that the auditor expects to incur should the financial statements still contain errors and should these errors become somehow known to the public. This is how liability enters the auditor's decision problem, since the expected losses largely depend on the system for auditor liability.

Moreover, almost all of the following results are directed to the auditor's third party liability. There are only a few approaches addressing aspects of auditor liability vis-à-vis the client (e.g., Melumad/Thoman, 1990), but they are embedded in models of voluntary disclosure and auditing and do not seem appropriate for issues of statutory audits. And finally, the following review does not include papers from the principal agent-literature in a narrower sense. These models are based on the assumption that there are no contractual limitations and that the principal can choose optimal contracts with both the manager and the auditor.[78] This regularly implies contingent contracts for auditors which are not possible due to legal and professional rules.

Strict Liability versus Negligence[79]

Given that from a theoretical standpoint the auditor's problem is seen to minimize expected total audit costs under a fixed audit fee, a threat from liability is necessary to induce an audit effort level that exceeds the minimum

[78] A review of this research is given in Ewert (1990) and Ewert/Stefani (2001b).

[79] The discussion in this section is a succinct review of results that can be found in: Simon (1981), Willekens/Steele/Miltz (1996), Narayanan (1994), Boritz/Zhang (1997), Smith/Tidrick (1997), Schwartz (1997), Schwartz (1998), Boritz/Zhang (1999), Ewert (1999b,c), Radhakrishnan (1999), Zhang/Thoman (1999), Wagenhofer/Ewert (2003), Beyer/Sridhar (2006).

level. In reality, of course, unforeseen problems that are encountered during the audit do give rise to additional audit effort as these additional costs are normally charged to the company over and above whatever fixed fee has been agreed.

Under a theoretical concept of strict liability (SL), an auditor is always liable if the financial statements contain errors. In reality, under negligence liability (NL), the auditor is, in theory, liable only if there are errors and if he has not delivered a level of "due care". Hence, under SL, the auditor is *ceteris paribus* exposed to a larger threat of having to pay damages, and at first glance it seems that his optimal audit level under SL exceeds that under NL. An implication of SL is that full compliance with auditing standards developed by professional bodies has no impact on auditor liability. There is no "due care"-defence for the auditor by referring to professional auditing standards, since he is always liable if the statements contain errors. Furthermore, the costs of operating the legal system are relatively large. Under the so called "British-rule" for allocating legal costs between the parties in a trial (which is also representative for many other European countries like, e.g., Germany), the party losing the trial has to pay all costs for the courts and lawyers. Given SL and evidence for errors in the financial statements, investors can be sure to win the suit and to collect damage payments from the auditor without having to incur costs (net of potential recoveries). However, recall that ex-ante investors will have to pay for this comfortable ex-post position through higher audit fees, and the audit fees also include the cost of the audit effort which is the auditor's optimal response to the SL-system. Hence, whether a (seemingly) higher audit effort under SL is really beneficial is an open question if only the effort is considered. We will return to this point later when explicit results concerning social welfare between SL and NL are discussed.

The vast majority of actual liability systems are of the NL-type. NL-systems essentially use professional auditing standards to arrive at a due care-level and provide the auditor with an element of defence against liability payments. Here it is acknowledged that even a due care-audit is imperfect and cannot find errors with certainty. If the due care-level has not been delivered, the auditor is clearly liable for damages. However, given the uncertainties surrounding a court trial, even if an auditor has complied with due care standards he may still have to agree to an out-of-court settlement rather than "bet the firm" by taking a case to court. However, to the extent that he has adequate insurance cover, then he is "insured" from damage payments by exercising at least the due care-effort. The NL-system has the appeal that it seems possible to define a desired auditing standard which is then enforced automatically by the auditor's incentive to, inter alia, avoid damage payments, and this can "easily" be achieved by delivering due care.

However, this supposition turns out to be problematical if strategic interdependencies between auditors and investors (see Figure 8) are taken into account. To see this, assume that there is a precise definition of due care (i.e., the professional auditing standards give perfect and precise guidance

and define clearly what is appropriate in the respective circumstances, which describes a state that is usually deemed as ideal). From a purely theoretical standpoint, we can suppose the due care-standard is relevant in the sense that the auditor would find it optimal to realize it if he is certain to be sued after errors become known. Then it cannot be the case that the precise NL-system leads to the result that the auditor always exercises due care. For if this were the case in equilibrium, then investors would know that they would always lose a trial, no investor would sue and there would be no threat from the liability system. But then there would be no incentive for the auditor to audit thoroughly, thus destroying the assumption that NL induces the due care-level. On the other hand, it is also not consistent with equilibrium that the auditor always realizes a substandard audit. In this case, investors knew that they would always win a trial and would always sue after errors become known. Hence, the auditor would face a sure threat of liability and – since the standard was assumed to be relevant – deliver due care. It follows that the equilibrium is characterized by so called "mixed" strategies on both sides, i.e., the auditor chooses the due care-standard and the (optimal) substandard-level with a certain probability respectively, and investors sue not for certain. Intuitively, the precise NL-system needs some uncertainty with respect to the implementation of the due care-standard in order to make the liability threat credible – otherwise no investor would find it profitable to sue. (Of course, this theoretical approach abstracts from the potential for "opportunistic" claims whereby an aggrieved third party initiates legal action in the hope that an auditor will be forced to settle out-of-court, regardless of his degree of culpability, rather than run the risk of an adverse court judgement that could bankrupt the audit firm. The Equitable Life claim against Ernst & Young in the UK is a good example of this phenomenon.)

Thus, precise NL leads to an "average" audit quality which eventually depends on the parameters of the entire system (i.e., the mechanism by which existing errors become known to the market which may trigger the suing decision of investors, the legal costs for investors and auditors, the effectiveness of the courts in identifying the actual audit level, the size of the damage payments etc.). It can be shown that the average amount of audit effort will increase in an environment where there are larger damage payments, lower legal costs for investors, a more effective court system and a higher due care-standard (as long as it remains relevant). Interestingly, it can also be shown that the average audit level (*ceteris paribus*) may be higher than the audit effort under SL. The reason is that the due care-standard can be fixed above the optimal audit level under SL without making the standard irrelevant, and the resulting randomization of the auditor between this standard as a corresponding optimal substandard-level may lead to an average audit quality which exceeds the sure quality under SL.

An objection to these arguments is that professional audit standards are seldom as precise as assumed since one of the drivers of audit quality is the ability for auditors to have to exercise their professional judgement. It may be more realistic within an NL-system to continue to embrace principles-based standards rather than adopt what the European Commission have referred to

as the "US cook-book approach" to standard setting that places undue emphasis on "rules". One could argue that under such imprecise (vague) standards neither the auditor nor investors can be sure ex-ante how the courts would judge a certain audit level, but one can normally assume that with higher audit efforts, the probability decreases that these efforts are viewed by the courts as unacceptable. Principles-based standards that enshrine the need to exercise professional judgement change the properties of NL since the auditor no longer has a defence in a trial (except for the case where he has exerted such a large effort that it is almost sure that courts would deem it as sufficient, but such an effort may be unrealistically high). Given the strategic interdependencies between the auditor and investors, the resulting equilibrium is now characterized by the auditor delivering a certain audit effort and the investors suing with a certain probability (which may equal 1 in special cases, then leading to always suing the auditor after errors become known to the market). One may suspect that the audit level under vague NL falls short of the level under precise NL since the auditor faces a smaller probability of damage payments for smaller audit levels. But this conclusion would be premature. The reason is that by increasing his audit effort, the auditor reduces both the probability of errors in the financial statements (leading to a reduction, but not to an elimination of the probability of being sued) and the probability of having delivered a substandard effort. This latter effect does not exist under precise NL and leads to an additional incentive to increase the audit effort under vague NL. Using this effect it can be shown that systems of vague NL can be designed to yield an equilibrium audit level that exceeds the average audit level under precise NL with even lower audit and legal costs, and since the average audit level under precise NL may exceed the effort under SL, the vague NL-system may also outperform SL with respect to audit quality.

It may be helpful to summarize the arguments presented so far: if only audit quality is considered, one need not worry about a suspected lower audit effort under vague NL. Conversely, it is just the uncertainty of the evaluation of a given audit level that causes an incentive to increase audit efforts which is not present under both SL and precise NL. In fact, vague NL can be designed to outperform precise NL as well as SL with respect to audit quality.

The effect of the liability rule on audit quality is certainly one of the basic mechanisms by which liability eventually influences the information content of earnings, but it is not sufficient to make statements with respect to social welfare. This requires a broader perspective in which the value of audits (i.e., the basic benefits minus the audit costs) has to be taken into account. Studies that analyze these problems assume that the basic benefits of an audit derive from improving real investment decisions, i.e., the audit enables investors to better assess the prospects of companies' investment projects and to make informed investment decisions. In these approaches, the expected liability payments are basically viewed as an ex-post transfer from auditors to investors for which investors have to pay ex-ante through the audit fee. Thus, should there be no costs in operating the legal system, the evaluation of a system for auditor liability could be based solely on the incentive effects of

the liability threat. The system induces certain audit efforts, which provide information to investors, who in turn react by modified investment decisions due to the better information. This yields financial benefits ex-ante by preventing suboptimal investment decisions, and if these benefits outweigh the (direct) audit costs, then a net advantage of the liability structure arises (notice that the liability payments do not appear in this objective since they cancel out in an ex-ante sense).

According to this view, one can show that – depending on the way the damages are measured – a system of auditor liability not only causes incentive effects for auditors but may potentially induce biased investment incentives on the part of investors. This occurs because the liability payments of auditors essentially act as a kind of ex-post insurance to operating losses in companies. This may bias the tradeoffs that investors face in deciding about the optimal level of investment after they have received the audit report (and after the audit fee has been paid), leading eventually to overinvestment. To prevent these effects it can be shown that the damage measure has to be constructed in a specific way, and given this, both SL and NL can be structured to yield the socially optimal level of auditing (i.e., the audit effort which maximizes the difference of the investment-induced benefits minus the direct audit costs). However, SL has less informational requirements than NL (because under (vague) NL, one needs specific information regarding the decision of courts to judge audit efforts as negligent etc.) and seems to be easier to implement.

This result may change if costs of using the legal system are taken into account. Such legal fees are usually seen as "deadweight" losses since they do not accrue to investors. Here, a system of vague NL has advantages over SL due to the basic incentive effects that have been presented above. Recall that under vague NL, increasing the audit effort not only increases the probability that existing errors are detected (this occurs under SL as well), but also decreases (but never eliminates) the probability that the courts view the audit efforts as negligent. Intuitively, vague NL provides two positive incentive effects by increasing the audit effort while SL offers only one effect. Hence, the level of damage payments under vague NL can be set lower than the level under SL. This saves legal costs (assuming that legal fees are proportional to damage payments) and leads to vague NL outperforming SL (however, the aspect of better implementability of SL still remains).

The situation becomes again different if settlements are additionally considered. Given the existence of legal costs, settlements are basically advantageous because they help to avoid these costs. The results of pre-trial settlements depend on the status-quo positions of defendants and plaintiffs as given by the legal liability system and on potential informational asymmetries (e.g., with respect to the audit effort and its negligence-assessment by the courts) between the parties. Under SL, these asymmetries do not play any role. Given that errors have become known to the market, auditors will certainly have to pay damages if investors sue. Hence, auditors and investors can quickly reach an agreement if the auditor offers the

investors their net benefits of suing, thus avoiding any legal costs. If the damage payments are set equal to the social benefits of auditing, then the auditor completely internalizes these benefits and the direct audit costs and delivers the socially optimal audit effort. Hence, SL can in principle be structured in such a way as to avoid any legal costs and yields an audit level that maximizes social welfare. On the other hand, settlements under vague NL suffer from problems of information asymmetry with respect to the audit effort and lead to trials with positive probability. In this view, SL outperforms vague NL due to its virtually "costless" establishment of the socially optimal result.

Summarizing the broader welfare analysis, the studies in this area are "constructive" in the sense that first a socially optimal audit level is basically defined, and the problem is whether it can be implemented by a suitable choice of the parameters of a specific liability system (SL vs. NL). The predictions depend on the incentive effects of liability threats under the respective system, but the liability payments per se cancel out ex-ante and affect the welfare comparisons only in so far as they cause legal costs which vary with the liability payments. Viewed in total, the results are somewhat inconclusive, but they seem to be in favour of SL since it is easier to implement, and avoids legal costs entirely if the option of pre trial-settlements is taken into account.

However, there are also some caveats:

- First, under SL there is essentially no role for professional auditing standards with respect to liability, and this seems hard to imagine for a real liability system. In fact, the existing systems are regularly of the vague NL-type where professional standards are used to determine negligence. However, in a later section on liability insurance it will be shown that SL can be coupled with auditing standards whose role is then shifted to another place in the entire system.
- An additional caveat is directed to the "constructiveness" of the approaches. In a conceptual model, it may be possible to define concepts like the socially optimal auditing level in principle, but the implementation of these aspects in reality is extremely difficult (no matter whether SL or NL is concerned) because no regulator has such comprehensive knowledge. Hence, the results of these approaches should be viewed with sufficient caution. Notwithstanding this, the general view of the welfare analyses should be recalled as often as possible: The effects of liability parameters on audit efforts are clearly among the main ingredients of any economic evaluation of the system under consideration, but what remains open is whether the change of audit efforts is itself advantageous.

Joint and several liability versus proportional liability

An important aspect of a liability regime is how damages are apportioned between company managers and auditors. The information content of the financial statements is the joint product of the manager's accounting policy and the auditor's efforts and his reporting behaviour (see Antle/Nalebuff, 1991). Under a strict proportional liability rule (PL), the courts determine the percentage by which they hold the auditor responsible for errors, and the auditor has to compensate plaintiffs by damage payments which equal the product of the damages and the percentage of responsibility. Under joint and several liability (JSL), the basic responsibility of the auditor is similar to PL, but should the company and/or the manager (as the co-defendant) be insolvent, then the auditor has to fully pay the damages. Hence, the systems differ in the case of bankrupt companies and/or managers.

The effects of PL versus JSL depend on the type of strategic interdependencies which are taken into account. A first approach concentrates on interdependencies between investors (as plaintiffs) and auditors and can be seen as a direct extension of analyses presented in the previous section (Chan/Pae, 1998). At first glance, the incentive effects are in favour of PL. To see this, assume a vague NL-rule and consider the decision problem of the auditor to determine his optimal audit effort. By increasing the audit effort, there now exists three positive effects: first an increase in the probability of detecting errors which reduces the expected liability exposure, secondly a reduction in the probability that the audit activities are judged as negligent, and finally a possible reduction in the responsibility percentage under the PL-rule (if this percentage depends on the audit effort). While the first and the second effect are also present under JSL, the third effect is more pronounced under PL because it works independently of the insolvency state of the manager (under JSL, the auditor's share of the damage payments always equals 100% should the manager be bankrupt). In principle, this provides a larger incentive to increase the audit effort *ceteris paribus*. However, the incentives for investors to sue the auditor after remaining errors have become known decreases under PL since the expected damage awards decrease. The reduction in the frequency of suing counteracts the positive incentives of PL with respect to audit quality, and it turns out that in equilibrium the audit efforts are lower under PL compared to JSL. Hence, if audit quality is the only aspect under consideration, JSL outperforms PL due to strategic interdependencies between investors and auditors. But recall that from the viewpoint of social welfare the comparison of both damage apportionment rules has to be seen in a broader framework. Thus, a reduction in audit effort by moving from JSL to PL might be beneficial if the efforts under JSL are too high, a situation that can clearly exist depending on the set of parameters.

Another approach concentrates on strategic interactions between managers and auditors (Hillegeist, 1999). The starting point is the observation that in most of the previous analyses, the manager was hardly an active player and

the basic error rate in the financial statements was held fixed. But if the auditor's incentives change according to the parameters of the liability system, the manager's incentives to manipulate earnings may also change. On the one hand, these incentives stem from aspects of increasing the market value of companies; on the other hand, they are curbed by the liability of company managers for misleading financial reports. Given these factors, the manager decides about his earnings management by anticipating a certain behaviour of the auditor, who in turn chooses his audit efforts under the assumption of a certain behaviour of the manager.

Now consider the responsibility percentage for the auditor under PL. If this percentage is relatively low, then the manager has a corresponding high liability exposure and will find it optimal to always report truthfully. Given this, the auditor's optimal response will be to supply the minimum audit effort consistent with the application of prevalent professional auditing standards, but this is not bad since the financial statements are free of errors anyway. On the other hand, if the auditor's percentage of responsibility is set relatively high by the courts, then the manager's liability exposure is small, which implies that he always decides to overstate the company's situation and the auditor exercises excessive audit efforts. In these extreme cases, the manager's actions can indeed be held fixed, which is consistent with the previous approaches. However, an interactive equilibrium arises if the auditor's responsibility percentage is in an intermediate range. Then the manager will manipulate earnings with a certain probability and the auditor provides sufficient effort to deter the manager from always misreporting the company's situation.

The striking effects of a change from PL to JSL arise in the case of the interactive equilibrium. To see this, observe that under JSL the auditor has to pay all damages should the manager be insolvent. Hence, moving from PL to JSL does not cause any change in the manager's liability exposure (since there is nothing to pay for him if he goes bankrupt), but it increases the expected damage payments for the auditor *ceteris paribus*. This causes a series of effects the final outcome of which may be a reduced quality of the financial statements in the new equilibrium under JSL. First, the auditor's optimal response to the larger expected damage payments imposed on him is to increase his audit efforts, which would be anticipated by investors in setting the company's market price. The market price includes the sum of the firm´s expected future cash flows and the expected damage payments. Thus, if investors now receive higher expected damage payments due to a switch from PL to JSL, the company´s market price increases. In addition, investors get better information about the company's prospects due to the higher audit efforts. This not only enables better investment decisions, but it also lends more credence to the earnings figures and increases the sensitivity of price with respect to earnings. However, this causes additional and possible detrimental effects: The increased price sensitivity has a positive impact for the manager to manipulate earnings since he can gain more by an undetected overstatement. Thus, there are countervailing effects with respect to the final quality of the financial statements, and it turns out that in an interactive

equilibrium, PL may lead to a higher financial statement quality despite of the larger audit efforts under JSL.[80]

Taken together, PL may well outperform JSL from an economic perspective even if it reduces the liability threat for auditors. What would clearly be desirable is an analysis that includes all types of interdependencies simultaneously. We are not aware of such an analysis, but in any case, the message emerging from the existing analyses seems clear: a large liability threat for auditors (here by using JSL instead of PL) is not advantageous per se if the optimal responses of other parties in the liability network are appropriately taken into account.

Of course, the effects described so far are derived from purely conceptual reasoning, and it seems interesting to look at some empirical evidence. In general, such evidence is hard to obtain since the change between JSL and PL is a rare event in reality. However, in 1995 the USA adopted the so-called "Private Securites Litigation Reform Act" (PSLRA) which – among other things – replaced the former JSL-rule by a variant of PL (see King/Schwartz (1997) for a survey of the main changes induced by the PSLRA).

With respect to audit quality, there is a study by Lee/Mande (2003) that concludes that audit quality has in fact declined after the adoption of the PSLRA. The relevant measures in this study are discretionary accruals, which are widely used in the recent empirical literature as representing the earnings management of auditees. The link between discretionary accruals and audit quality relies on the fact that a thorough audit should curb the managers´ activities to bias earnings. Hence, if audit quality decreases, the magnitude of discretionary accruals should increase. Moreover, since the big audit firms are mainly affected by changes in the liability regime, any effects caused by a change from JSL to PL should empirically be most pronounced for the clients of the (former) Big-6 audit firms. Lee/Mande (2003) find that the magnitude of income-increasing discretionary accruals for clients of the (former) Big 6 has increased for a three-year period after adoption of the PSLRA compared to the three-year period before its implementation. In light of the two conceptual approaches to the JSL-vs.-PL issue discussed above, these empirical results are more consistent with the first one that concentrates on strategic interdependencies between investors and auditors.

Additional empirical evidence that corroborates these findings has been provided recently by Geiger et al. (2006). The authors study the propensity of auditors to issue going concern-qualifications immediately before companies failed. They consider almost 700 cases of firms that filed for bankruptcy during a ten year period ranging from 1991 to 2001 and differentiate between

[80] Interactions between the actions of managers and auditors are also studied in Nelson/Ronen/White (1988) with a completely different approach. The authors also find countervailing effects, and positive effects for the equilibrium accuracy of the financial statements by changing certain parameters can occur only under specific assumptions. See also Pae/Yoo (2001) for a related approach.

the period before and after the adoption of the PSLRA. They find that the frequency of the (former) Big-6 audit firms to issue going concern-modifications has significantly declined after the adoption of the PSLRA, while there was apparently no change for the audit firms in the smaller market segments. These effects are consistent with the results of Lee/Mande (2003) in that the switch to a PL-type regime has apparently led to less conservative behaviour of those audit firms that are most affected by liability rules.

Other studies attempted to detect wealth effects of the PSLRA by examining the changes of stock prices at the different critical dates during the discussion and adoption of the PSLRA. Two papers (Spiess/Tkac (1997), Johnson/Kasznik/Nelson (2000)) find positive wealth effects implying that even a decrease in audit quality (as suggested by Lee/Mande (2003)) is viewed as beneficial by investors, presumably by netting all negative and positive aspects (positive effects could arise due to a reduction of audit costs, legal costs etc.). However, another paper (Ali/Kallapur (2001)) claims that there were in fact negative price effects due to the PSLRA. The dispute essentially centers around the question who has better identified the "right" dates to measure the price effects. Viewed in total, the results of these papers are inconclusive.

Extent of auditor liability (caps etc.)

The arguments regularly advanced in favour of extended auditor liability are relatively straightforward: Increasing the threat from the liability system causes auditors to supply greater audit efforts and to report more truthfully. Hence, audit quality eventually increases which improves the information content of the financial statements, which in turn benefits the capital market and the allocation of resources in the economy.

However, the arguments presented in the two previous sections should have already made clear that such a focus on audit quality alone is not sufficient to make statements about the desirability of large audit efforts and an extended auditor liability. In fact, if only audit effort is considered, then – regardless of whether SL, NL, JSL or PL prevails – the audit effort basically increases in the size of the expected liability payments. And if a so-called "decoupled" liability system (whereby the penalties that the auditor has to pay are decoupled from the awards that accrue to investors) is taken into account, then the expected payments of the auditor (neglecting for the moment any aspects of limited wealth) can be made independent from the actual damage and large enough to induce virtually every audit effort. But since investors have to pay ex-ante for these costs that are allocated to auditors, the ultimate goal is to induce an audit level that is appropriate from social welfare considerations, holding fixed other parameters that characterize the liability system (i.e., SL vs. NL, JSL vs. PL etc.). Hence, it should come as no surprise that there are results in the literature implying that restrictions on auditor liability (by letting the auditor limit his "wealth at risk" through

incorporation, by introducing caps, by using a privity approach instead of a foreseeability approach etc.) may in fact be socially desirable.[81]

To illustrate this it is perhaps instructive to consider the market equilibrium approach of Dye (1995) regarding the incorporation of the audit company which leads to a limitation of the assets available for paying damages. Notice that a system of unlimited liability is not as unlimited as it seems at first glance, because the damage payments are naturally limited by the auditor's wealth. Thus, under unlimited liability the audit effort depends on the entire assets of the auditor and increases in his wealth – hence, wealthier auditors supply larger audit efforts since they face larger expected liability losses. This yields better information for investors and enables them to improve their investment decisions. Furthermore, investors receive higher expected damage payments from wealthier auditors. On the other hand, the auditors demand compensation ex-ante for the expected liability losses and their audit efforts, and it turns out that there is in fact an "optimal" wealth level from an ex-ante point of view that maximizes the net benefit of audits. Incorporation allows wealthy auditors to reduce their "wealth at risk" to a socially optimal level and to extract at least part of this benefit (since they now offer an audit quality that is not "too high"). The average audit quality in the market declines, but this is not detrimental because the economically overstretched audit efforts under unlimited liability are simply driven out of the market. And in the long run, it can be shown that due to the resulting change in market structure (more wealthier auditors can profitably enter the market by restricting their liability and thus bonding themselves to offer optimal audits), the value of the audits to investors increases. Notice that the demonstrated effect of limiting liability via incorporation can be also provided if auditors are allowed to contractually restrict their liability by an amount that is equal to the wealth level that would lead to the socially optimal audit effort.

The results emphasizing the net productive role of audit efforts are reinforced by recent research regarding earnings management. There it has been shown that there are close relationships between accounting and real earnings management (see Ewert/Wagenhofer, 2005). Accounting earnings management occurs solely in the books, while real earnings management involves changing the company's transactions in order to present a "favourable" picture in the financial statements (even if the changed policy destroys company value). It turns out that restrictions on accounting earnings management induce managers to employ more real earnings management which leads to a waste of real resources. From this viewpoint, higher audit quality may not unequivocally enhance the allocation of resources. Higher audit efforts lead to more restrictions for company managers to exercise accounting earnings management, and this raises the danger of a substitution

[81] See, e.g., Dye (1993a,b), Dye (1995) and Chan/Wong (2002). The model in Thoman (1996) incorporates competition in the audit market and yields the result that an increase in the legal exposure of auditors may even lead to less audit efforts. However, this result depends on very special circumstances (in particular, the report space of the auditor) and seems hardly generalisable.

by means of changed transactions. As far as this substitution effect (which can also be empirically demonstrated)[82] cannot be curbed by other governance mechanisms, even the gross benefits of steadily increasing audit efforts by raising expected liability payments are no longer obvious.

Liability Insurance

Given a liability threat the issue of insurance becomes important, and in most jurisdictions (e.g., Germany) auditors are even obliged by law to buy insurance. The results presented in the previous sections are all based on the assumption that the auditor fully bears the actual ex-post burden that results from a lost trial. Thus, they do not capture the fact that in the case of insurance, to the extent that it provides for genuine risk transfer, the indemnity payments are incurred by the insurer. This may cause the well-known moral hazard problems of insurance, since the auditor faces a different trade-off after he has bought insurance and after he has paid the respective premium.

However, it may well be argued that the results from models that do not include insurance are at least approximately representative of the effects that occur in scenarios with insurance. The reason is that from an empirical viewpoint, insurance premiums will usually be adjusted over time as a response to risks that have occurred in past periods (this can be particularly expected for the captive insurance arrangements of the large audit networks). Hence, from a theoretical standpoint, in the long run the insurance premiums reflect actual risks with a certain time lag, and this is analogous to the effects that are depicted in models without insurance. (However, in reality, after a period of extended losses (i.e., where claims have consistently exceeded insurance premiums) there will come a point in time at which a commercial insurer will "cut his losses", pull out of the professional indemnity market and allocate his finite resources to more profitable business.)

Notwithstanding this argument it is important to know how the efficacy of auditor liability rules might change if insurance is explicitly taken into account. Unfortunately, the majority of audit liability research is relatively silent on issues of insurance. The reason is that in this research, all players are regularly seen as risk neutral utility maximizers. Hence, the role of insurance is somewhat questionable since risk per se does not matter to any player, and given that insurance potentially causes another source of moral hazard, any productive effects of insurance are questionable as well. Thus, it should come as no surprise that in such analyses one normally gets the result that no auditor would find it optimal to buy insurance if he is not obliged to do so.[83]

[82] See Ewert/Wagenhofer (2005) and the literature cited therein.

[83] See, e.g., Moore/Scott (1989). The moral hazard aspects of insurance are particularly stressed in the papers of Schildbach (1996 a,b) where it is argued that any insurance should come into play only after the auditor´s wealth has completely been used for indemnity payments. Here, insurance is something like the "rescuer of last resort" for investors, but it provides no help for auditors.

An exception to this is the approach taken in Dye (1995) that was already discussed in the previous section. Here one can argue that properly constructed insurance contracts can provide benefits even with risk neutral players since insurance may substitute for incorporation. That is, the insurance contract should contain deductibles in such a way that the remaining liability payments for wealthier auditors equal the amounts that would result from incorporation.

However, in order to have a more meaningful role of insurance one has to assume risk averse auditors, and there are not even a handful of papers that deal with such aspects (see Balachandran/Nagarajan, 1987 and Ewert/Feess/Nell, 2000a, b). With respect to the structure of liability systems, precise NL seems to be interesting from an insurance perspective because a precise NL-system has essentially a "built-in" insurance: if the auditor supplies the due care standard, then he is automatically shielded from any damage payments to plaintiffs. Under precise NL, a natural idea is to make the due care level optimal for the auditor in equilibrium. Then he would bear no risk in equilibrium, implying that the audit fees need not contain any risk premium to compensate for litigation risk. This approach is essentially taken in Balachandran/Nagarajan (1987), where the authors attempt to show that a precise NL-system coupled with partial insurance induces the auditor to deliver due care. Here the insurance covers a certain percentage of the damage payments, and it is shown that there exists a lower bound for the corresponding percentage of the auditor to make the due care actions optimal for him. However, this implies that if there is no insurance, the auditor's percentage of the damage payments always exceeds the lower bound which also leads to the desired result. Hence, the role of insurance is still open in this approach.

Furthermore, under precise NL it has been argued above that the due care standard cannot be implemented for sure in equilibrium if strategic interdependencies between auditors and investors are taken into account. Hence, precise NL loses much of its apparent appeal from a risk-sharing viewpoint since the risk averse auditor has still to bear risk in equilibrium and the due care standard is only realized with a certain probability. It turns out that these problems can be mitigated by switching to an SL-system coupled with liability insurance for the auditor. [84] To see this, recall that under SL, the auditor is basically liable for remaining errors and investors would always win a suit against the auditor. Now assume that there is the option to buy insurance for ex-ante fair premiums. Further assume that the insurance contract contains the obligation that the auditor adheres to the due care standard, i.e., if the auditor exerts the due care effort, then the insurer assumes all indemnity payments and legal fees, otherwise the auditor has to bear the entire litigation risk. If the actual audit effort is costlessly verifiable

[84] [84] See Ewert/Feess/Nell (2000a, b) for a detailed analysis.

ex-post, then this combination of SL and obligation-based insurance leads to a Pareto-improvement over precise NL. With respect to audit quality, the due care level is now perfectly implemented and the auditor no longer bears risk in equilibrium (which at the same time leads to a reduction in the audit fees since they now include only the expected liability payments (through the insurance fee) but no longer any risk premium) . If the actual audit effort can only be verified ex-post by costly investigation processes, a similar equilibrium as under precise NL arises, i.e., the insurer verifies with a certain probability and the auditor exercises due care with a probability smaller than one. But this equilibrium outperforms the result under precise NL with respect to risk sharing and average audit quality if the verification costs accruing to the insurer do not exceed a certain threshold that depends on the size of the legal costs and the damages. It seems reasonable to assume that this requirement is fulfilled since the damage payments alone may reach considerable amounts in reality.

Notice that while under an SL-system there is basically no role for professional auditing standards with respect to liability, SL coupled with obligation-based insurance is different because the place where the standards come into play is shifted. The standards are now relevant in the relationship between the auditor and the insurer but not for determining the legal liability. This combination leads not only to better risk sharing but also to an alleviation of the moral hazard problem.

The idea of using obligation-based insurance contracts is also applicable to a system of vague NL. Here the auditor delivers a certain audit effort in equilibrium and investors sue with a certain probability. The insurance contract should include the obligation that the actual audit level must not fall short of the equilibrium audit level under the vague NL-system without insurance, and vague NL now remains the basic system for auditor liability. Then, with insurance, investors sue with the same probability as before, the auditor delivers the same equilibrium audit effort as before, but he no longer bears risk which reduces expected total audit costs due to the elimination of risk premiums. The ex-post verification of the actual audit effort is done by the legal system through the suing behaviour of investors. As vague NL is more representative for the prevailing liability systems in most countries, and since it is only extended by a suitable choice of insurance, this scenario seems to be the most realistic one and allows for a meaningful role of insurance and professional standards.

Summarizing the results of this research, it follows that insurance allows for socially beneficial effects and can be structured in such a way as to curb the moral hazard effects that otherwise may exist under insurance. The arguments show that in principle, there exists some form of liability insurance for auditors such that risk sharing can be improved without inducing moral hazard. The negative incentive effects that could arise with insurance are eventually prevented by the obligations in the insurance contracts. It has to be admitted that under vague NL, these obligations refer to an audit effort that

would be supplied in an otherwise prevailing equilibrium, thus, it may be difficult to exactly implement such obligations in reality.

Three additional remarks are in order:

- First, the analysis was directed to the basic existence of beneficial auditor liability insurance. Another issue is whether the insurance market will actually provide such insurance. This is an empirical question that is directed to the insurance industry. To set the appropriate obligations, insurers would have to analyze the aspects that are relevant for a particular audit engagement. This implies that they would have to follow a "risk-based-approach" with respect to a specific audit, while a standardized "one-size-fits-all" procedure seems not appropriate.
- Second, to the extent that an audit firm has to "self-insure" through a wholly-owned captive insurance company, this self-insurance has to be considered to be a "non-beneficial" insurance since there is no effective transfer of risk to a commercial third-party. Logically, the existence of self-insurance cannot affect the degree of audit effort as discussed above.
- Finally, the mere existence of sufficient insurance (both beneficial and non-beneficial) may increase the suing frequency in equilibrium if wealth constraints for auditors are additionally taken into account. As was argued above in the discussion of the approach of Dye (1995), the auditor typically has limited wealth which provides a "natural" cap on liability. At the same time, this curbs the suing activity of investors in the equilibrium without insurance since it restricts the gains from winning a trial. Now, with insurance these gains may increase which leads to more suing on the part of investors (see, e.g., Moore/Scott, 1989). The welfare aspects of this change (impact on audit effort, legal costs etc.) are not obvious a priori. However, any increased suing can be prevented if the insurance contract contains a cap which restricts the coverage by an amount equal to the auditor's personal wealth. In this case, the expected gains of investors from suing the auditor are essentially unchanged, which should lead to the same suing behaviour with and without insurance.

Complementary factors

As already mentioned in Figure 8, liability is not the only device for providing incentives to control the behaviour of the auditor. In addition, there are reputational and behavioural effects that also influence the audit activity.[85] The threat of losing reputation (for both individual auditors and the firms for which they work) can be seen as another element in the auditor's

[85] See Wilson (1983), Datar/Alles (1999) and Bigus (2006a,b).

cost function that has an impact on his optimal actions, and the auditor may have an incentive to supply more than the minimum audit effort even if there is no threat from the liability system. Assuming that reputational and behavioural effects are present, the consequences from introducing and/or changing liability rules should be evaluated by also including reputational aspects. Issues of reputation may have become more relevant for audit companies after the collapse of Enron and the resulting withdrawal of Andersen from the audit market, because this can be seen as a worst case-scenario of lost reputation. However, one can only speculate about the current empirical relevance of the impact of reputation on actual auditor behaviour.

From a conceptual point of view, there are some subtle elements in analyses of auditor reputation. The issue is to explain how reputation can be built and lost in the market for audits, where the actual effort and/or quality are generally not observable to external parties. The starting point of reputational analyses is first to assume that there are different types of auditors, those that are intrinsically "strong" and others that behave opportunistically. The latter types of auditors may find it profitable to mimic the behaviour of the strong ones, but it remains open how auditors can demonstrate their actual efforts and the quality of their work. Hence, it turns out that "in the background", one needs some separate and independent verification mechanism (working without any moral hazard) which can be triggered occasionally (e.g., if the company faces a bad outcome although the financial statements and the corresponding audit report did not show any problems) by investors such that, at least sometimes, the actual quality is observed.

In light of these results, the developments in many countries to improve the audit oversight mechanisms may actually help the market to better establish reputational effects[86] (see also section 27 of the report for a discussion of this point). For instance, if there is an independent board which has the right to perform additional checks of financial statements (according to existing suspicious facts and/or purely random) and of audit firms themselves, then this may be seen as an example of an independent verification mechanism by which malpractice can be detected. Of course, such detection may not only lead to a loss of an auditor's reputation but also give rise to losses resulting from auditor liability. In any case, acknowledging that reputational effects as well as oversight mechanisms may work in addition to liability provides some relief for the tasks that the liability rules are supposed to fulfill.

Conclusions

The results of the conceptual research on auditor liability first imply that liability rules are basically one of a number of important factors for the provision of incentives to supply appropriate audit efforts. However, the

[86] A similar line of reasoning can be found in Arruñada (1999), p. 39; he argues that regulation may help to produce the necessary information on which market reactions can be based.

specific liability system has to be chosen with deliberation to actually guarantee beneficial effects from a broader perspective of social welfare. In particular, it would be a fallacy to conclude that a large extent of auditor liability is preferred simply because it may help to induce high audit efforts. In a certain sense, liability payments are a "net wash" because they show up ex-ante in the audit fees such that investors pay for the recovery they receive from the auditor in cases of ex-post errors in the financial statements. Furthermore, auditor liability works by means of the legal system and induces social costs for the operation of the institutions involved therein. In addition, liability rules are not the only incentive device for auditors since they work jointly with other factors like reputation and oversight mechanisms. It follows that there basically exists a threshold above which there is "too much" liability since the gross benefits of the improved quality of the financial statements are not sufficient to outweigh the additional audit and legal costs.

Given this general perspective, we think that the following recommendations concerning specific parameters of a liability system for auditors may be appropriate according to the arguments presented in this report:

- Most existing liability regimes for auditors are of the (vague) negligence type and use professional standards to define due care. While a system of strict liability seems to have some mild advantages over a negligence system from a "constructional" viewpoint, we have doubts whether these advantages are sufficient to justify the rather radical move to strict liability.
- Joint and several liability may induce higher audit efforts than strict proportional liability, but at the same time it opens up the possibility for increased incentives for managers to misrepresent the company's financial situation in the first place. Furthermore, according to the general view presented above, the mere increase in audit efforts would not in itself justify joint and several liability. Hence, a regime of strict proportional liability seems reasonable, and the determination of the respective percentages of responsibility should consider the incentives for both managers and auditors (i.e., a higher percentage for the auditor implies increased incentives for managers to manipulate earnings etc.).
- As is already implied by the general perspective, a regime of unlimited liability can hardly be justified and the introduction of caps on liability seems to be appropriate.

With respect to liability insurance under a negligence system, it was argued that in principle, there exist insurance contracts coupled with obligations using professional standards of due care such that the advantages of risk sharing are provided without inducing additional problems of moral hazard. The terms of these contracts have to be adapted to the specific situation of an actual audit.

Annex 7 The effect of auditor liability regimes on audit quality

Introduction

This annex investigates the effects different regimes of liability, disclosure, judiciary effectiveness and financial authority power have on the quality of auditing. In our econometric model we approximate audit quality through the quality of accruals, as measured by the magnitude of the estimation error in accruals. The rationale for this is that a higher estimation error in accruals leads to worse accruals. Worse accruals, by increasing the information risk associated with investment, are associated with higher financial risk and therefore higher cost of capital. In the same way, low quality auditing reduces the information available to investors, thereby increasing the risk of investment and increasing the cost of capital. It follows that audit quality and accruals quality are correlated through their effect on capital markets.

Review of literature on audit quality

On the theoretical level, the relevant literature often defines audit quality as the joint probability that an existing problem is discovered and reported by the auditor (DeAngelo, 1981; Lennox, 2003; Watts and Zimmerman, 1981; Raghunathan et al., 1987). This probability is, however, difficult to observe. Consequently, many articles have attempted to find more practical measures of audit quality.

In one of the most important articles on audit quality, DeAngelo (1981) argues that audit quality is not independent of audit firm size, even when auditors initially possess identical technological capabilities. In particular, when incumbent auditors earn client-specific quasi-rents, auditors with a greater number of clients have 'more to lose' by failing to report a discovered breach in a particular client's records. This collateral aspect increases the audit quality supplied by larger audit firms. Lennox (1999) investigates why larger audit firms supply higher audit quality. The article finds support for the deep pockets hypothesis, according to which large auditors are more accurate because they have greater wealth at risk from litigation.

There is nevertheless some evidence that audit quality may not be associated with auditor size. Upon examination of the discretionary accruals of firms listed on the Korean Stock Exchange from 1994 to 1998, Jeong and Rho (2004) find that there is no significant difference between the discretionary accruals of firms with Big-6 and non-Big-6 auditors. This holds true for firms that switch from non-Big-6 to Big-6 auditors and vice versa. These resources imply that there may be no difference in audit quality between Big-6 and non-Big-6ix auditors in Korea. This is consistent with other studies in Korea, while inconsistent with the findings of previous studies on audit quality in other countries.

Following DeAngelo (1981), many articles have simply used auditor size as a proxy for audit quality; that is, an audit is considered of 'high quality' if performed by one of the 'Big Five' auditors, and low quality otherwise (see for example Riahi-Belkaoui, 2004; Jensen and Payne; 2003). Other articles have classified the quality of audit according to the outcome of legal dispute (Fuerman, 2003) or according to the frequency of litigation activity of audit firms (Palmrose, 1988).

A number of important recent articles depart from the size-quality dichotomy, to approximate audit quality through the quality of accruals (Tilis, 2005; Francis et al., 2004; Dechow and Dichev, 2002). The model of accruals quality used in this section draws mainly from Dechow and Dichev (2002) – hereafter D&D (2002). The main thrust of this article is that the quality of accruals and earnings is decreasing in the magnitude of estimation error in accruals.

The Dechow and Dichev study

This study is based on the intuition that accruals are temporary adjustments that resolve timing problems in the underlying cash flows at the cost of making assumptions and estimates. Precise estimates imply a good match between current accruals and past, present, and future cash flow realizations, while imprecise or erroneous estimates reduce the beneficial role of accruals. Accordingly, accrual quality is defined as the extent to which accruals map into cash flow realizations. In the empirical domain, the authors enumerate this notion of accrual quality as the standard deviation of the residuals from firm-specific regressions of working capital accruals on last-year, current, and one-year-ahead cash flow from operations.

One important feature of this article's approach is that the notion of estimation errors includes both intentional and unintentional errors. This distinction is important because most existing research assumes that accrual and earnings quality is only affected by management intent to manipulate, while such intent is unobservable, and likely idiosyncratic and sporadic. In contrast, D&D's approach reveals that accrual quality is likely to be systematically related to observable and recurring firm characteristics like volatility of operations because higher volatility is associated with higher incidence of unavoidable estimation errors.

D&D use data from the Compustat annual industrial and research files over 1987 to 1999. Their final sample comprises 15,234 firm year observations for 1,725 firms.

The authors find that accrual quality is negatively related to the absolute magnitude of accruals, the length of the operating cycle, loss incidence, and the standard deviation of sales, cash flows, accruals, and earnings, and positively related to firm size. These findings are consistent with their hypothesized relations, set as follows:

- **The longer the operating cycle, the lower accrual quality.** Longer operating cycles indicate more uncertainty, more estimation and errors of estimation, and therefore lower quality of accruals.

- **The smaller the firm, the lower accrual quality.** Large firms are expected to have more stable and predictable operations and, therefore, fewer and smaller estimation errors. In addition, large firms are likely to be more

diversified and various portfolio effects across divisions and business activities reduce the relative effect of estimation errors. Hence, larger firms tend to have better accrual quality.

- **The greater the magnitude of sales volatility, the lower accrual quality.** Sales volatility indicates a volatile operating environment and the likelihood of greater use of approximations and estimation, with corresponding large errors of estimation and low accrual quality.

- **The greater the magnitude of cash flow volatility, the lower accrual quality.** High standard deviation of cash flows is another measure of high uncertainty in the operating environment.

- **The greater the magnitude of accrual volatility, the lower accrual quality.** Since our measure of accrual quality is derived as a residual from accruals, accrual volatility and accrual quality are at least partly related by construction.

- **The greater the magnitude of earnings volatility, the lower accrual quality.** Earnings are defined as the sum of cash flows and accruals. Since the volatility of both components is predicted to be negatively related to earnings quality, we expect that greater volatility in earnings signifies lower accrual quality.

- **The greater the frequency of reporting negative earnings, the lower accrual quality.** Losses are indicative of severe negative shocks in the firm's operating environment. Accruals made in response to such shocks are likely to involve substantial estimation error. Thus, losses are indicative of low accrual quality.

- **The greater the magnitude of accruals, the lower accrual quality.** More accruals indicate more estimation and errors of estimation, and therefore lower quality of accruals.

McNichols (2002) links the D&D analysis of earnings quality to the literature on discretionary accruals, by adapting the D&D model to assess the specification of the Jones (1991) model. Jones' intent was to *separate* discretionary accruals (DA) from nondiscretionary accruals, while D&D's intent was to assess accruals as a whole, without attempting to separate management-induced effects from all other effects.

According to McNichols, the estimation results in D&D suggest that including cash flows in the Jones model might reduce the extent to which the model omits variables that are correlated with sample firms' economic fundamentals. Similarly, measurement error in D&D's estimation may preclude them from controlling for the fundamental factors influencing accruals. Therefore, including sales in the D&D model provides a useful specification check on the magnitude of measurement error in their cash flow variables. To assess this, McNichols compares the incremental explanatory power of the independent variables in each of these models for the other, to provide evidence on the validity of each specification. We shall discuss the three alternative specifications she employs when presenting our own regression analysis.

Limiting auditor liability

We now test for the marginal effect of different liability regimes on audit quality. Specifically, we test for whether the introduction of a liability cap increases or decreases audit quality with respect to unlimited liability. We shall test if it is possible to discern these effects empirically when presenting our regression results below.

Our Analysis

In our study we choose to follow leading articles on audit quality [as discussed above, D&D (2002), Tilis (2005) and Francis et al (2005) and McNichols (2002)] in using accruals quality as a proxy for audit quality.

Our analysis is divided into two parts. The first part focuses on computing an estimate of accruals quality, while the second part focuses on investigating the determinants of accruals quality. In this way we are able to test for the effects different liability regimes have on accruals quality, and therefore audit quality.

We use data from Amadeus for the 25 European countries. The raw data comprises 114,690 firm-year observations from 7,649 different publicly listed companies. After cleaning for non-consecutive years and missing observations, we are left with 13,443 firm-year observations from 2,107 different companies and 17 EU countries. Table 122 contains the breakdown of companies by country.

Table 122: Observations per country: audit quality		
Country	**Number of Companies**	**Number of firm years**
Austria	5	28
Belgium	54	362
Czech Republic	29	202
Estonia	7	35
Finland	73	489
France	355	2,125
Germany	153	989
Greece	277	1,872
Italy	58	362
Luxembourg	3	19
Netherlands	106	715
Poland	2	11
Portugal	49	329
Slovak Republic	55	332
Spain	140	927
Sweden	144	721
United Kingdom	597	3,925
Total	**2,107**	**13,443**

London Economics

PART 1

In the first part of the analysis we define accruals quality following D&D (2002) as the magnitude of the estimating error in accruals. We employ four different regression specifications to compute such estimates.

The first two models draw directly on D&D, and quantify the concept of estimating error in accruals as the standard deviation of the residuals from a model regressing cash flows from operations on total current accruals at a firm level. However, we modify the D&D model slightly by including the lag of the rate of return on total assets for each firm as an additional explanatory variable. The motivation for this inclusion is to control for the effect of firm's performance on discretionary accruals.

Model 1 and Model 2 differ between them mainly for the specification of the dependent variable: Model 1 uses the change in working capital, while model 2 uses total current accruals.

Models 3 and 4 follow exactly models (2) and (3) in McNichols (2002, p. 65). In Model 3 we use as dependent variable the change in the working capital and as regressors the change in sales and the level of property, plant and equipment (PPE) following the Jones (1991) model of discretionary accruals. In model 4, we combine

the D&D model with lagged, current and future CFO with the Jones model of change in sales and PPE.

The four models are presented in detail below.

Model 1

This model from D&D uses as dependent variable the change in working capital and as explanatory variables the lag, current and next period cash flow from operations and the lag of the rate of return on total assets. Therefore the regression model is as follows:

$$\Delta WC_{j,t} = b_0 + b_1 CFO_{j,t-1} + b_2 CFO_{j,t} + b_3 CFO_{j,t+1} + ROA_{j,t-1} + \varepsilon_t$$

Where:

- ΔWC = change in working capital
- CFO_t = Cash Flows from Operations at time t =

  = Profit and Loss after tax at t - Total Accruals at t

  - Total Accruals is defined as: Tot Acc= (ΔCA- ΔCL – ΔCC+ ΔSTDEBT) – DE

    Where:

    - DE: Depreciation
    - ΔCA: change in current assets
    - ΔCL: change in current liabilities
    - ΔCC: change in cash
    - ΔSTDEBT: change in short term debt
- $ROA_{j, t-1}$ is the rate of return on total assets at time t-1

Data for working capital (WC), for Profit and loss (P/L) after tax and rate of return on assets is available from Amadeus. We compute CFO and Total Accruals by using the definitions in Table 123.

Model 2

Model 2 follows Tilis (2005) in using Total Current Accruals. The explanatory variables are the same as in model 1:

$$TCA_{j,t} = \varphi_{0,j} + \varphi_{1,j} CFO_{j,t-1} + \varphi_{2,j} CFOj_{,t} + \varphi_{3,t} CFO_{j,t+1} + ROA_{j,t-1} + v_{j,t}$$

Where CFO_t and ROA_{t-1} is defined as in Model 1 and:

TCA = Total Current Accruals at t

as defined in Table 123.

Model 3

Similarly to Model 1, Model 3 uses the change in working capital as the dependent variable. Following Jones (1991), explanatory variables are the change in sales in the current period and the level of tangible fixed assets, which we use as a proxy for property, plant and equipment.

$$\Delta WC_{j,t} = b_0 + b_1 \Delta Sales_t + b_2 TFA_t + \varepsilon_t$$

Model 4

Model 4 follows McNichols (2002) in combining the D&D and the Jones specifications. As in the previous model, we use the level of tangible fixed assets as a proxy for property, plant and equipment. The resulting regression equation is:

$$\Delta WC_{j,t} = b_0 + b_1 CFO_{j,t-1} + b_2 CFO_{j,t} + b_3 CFO_{j,t+1} + b_4 \Delta Sales_t + b_5 TFA_t + \varepsilon_t$$

Table 123: Variable definitions in empirical analysis of audit quality

Name	Definition	Computation
WC	Working Capital	Available in Amadeus
CP	Collection period	Available in Amadeus
CA	Current Assets	Available in Amadeus
TA	Total Assets	Available in Amadeus
CL	Current Liabilities	Available in Amadeus
CC	Cash	Available in Amadeus
LO	Loans	Available in Amadeus
CR	Creditors	Available in Amadeus
DE	Depreciation	Available in Amadeus
PL	P/L after tax	Available in Amadeus

Table 123: Variable definitions in empirical analysis of audit quality

Name	Definition	Computation
SA	Sales	Available in Amadeus
ROA	Return on Total Assets (%)	Available in Amadeus
TFA	Tangible Fixed Assets	Available in Amadeus
Tot. Curr. Acc	Total Current Accruals	ΔCA- ΔCL – ΔCC+ ΔLO
Tot. Acc.	Total Accruals	(ΔCA- ΔCL – ΔCC+ ΔLO) - DE
CFO	Cash Flow from Operations	PL – Tot. Acc.

Note: All variables but ROA are scaled by average total assets.
Source: London Economics

For all four models we run individual firm time series regressions, and compute the residual for each regression, thus obtaining one set of residuals for each model. Depending on the model, the residuals can be interpreted as the component of accruals unrelated to cash flows from operations (model 1 and 2), as discretionary accruals (model 3) or as that portion of discretionary accruals that is unrelated to cash flows (model 4).

PART 2

In the second part of our econometric analysis, we regress 8 variables for company-characteristics, one liability cap dummy and three country specific variables over the standard deviation of all four sets of residuals obtained in part 1. Table 124 contains a brief definition of all the variables in our regression model and their descriptive statistics.

The country-specific variables are indices of: disclosure regime, general effectiveness of the judiciary system and powers of the financial supervisory authority, as set out in La Porta et al. (2006). For each of these three variables, the maximum value is 1 and minimum is 0. A higher value corresponds to a greater level of protection for minority shareholders against misleading disclosures or expropriation by managers and majority shareholders.

We now describe the three variables in brief, and refer readers to the descriptions provided by La Porta et al. (2006) for further detail.[87]

The disclosure index is the average of six component variables measuring:

1. legal requirements on the delivery of securities prospectuses to investors prior to securities issuance,
2. an index of disclosure requirements regarding the compensation of directors and key officers in securities prospectuses,

[87] In particular, see the notes to the dataset La Porta et al. provide at http://post.economics.harvard.edu/faculty/shleifer/papers/securities_data.xls.

3. an index of disclosure requirements regarding the issuer's equity ownership structure,
4. an index of prospectus disclosure requirements regarding the equity ownership of the issuer's shares by its directors and key officers,
5. an index of the prospectus disclosure requirements regarding the issuer's contracts outside the ordinary course of business, and
6. an index of prospectus disclosure requirements regarding transactions between the issuer and its directors, officers and large shareholders.

The 'supervisor powers' index is the average of four component variables, measuring

(i) Whether a majority of the members of the supervisory authority are unilaterally appointed by the executive branch of government,

(ii) Whether members of the supervisory authority have security of tenure,

(iii) Whether supervisory responsibility for commercial banks and stock exchanges is split between government agencies, and

(iv) Whether the supervisor can issue regulations without prior approval of other government authorities.

The 'judicial effectiveness' index is an assessment of the efficiency and integrity of the legal environment as if it affects business, and particularly foreign firms, produced by the agency International Country Risk and referring to the period 1980 to 1983.

Table 124: Descriptive statistics: audit quality			
Variable Name	**Variable Description**	**Mean**	**Standard deviation**
Firm specific variables			
σ (Res. 1)	Standard Deviation of Residuals (Model 1)	0.024	0.031
σ (Res. 2)	Standard Deviation of Residuals (Model 2)	0.015	0.019
σ (ΔWC)	Standard Deviation of the Change in Working Capital	0.085	0.085
σ (P\L)	Standard Deviation of P\L after tax	0.068	0.105
σ (Sales)	Standard deviation of sales	0.281	0.322
σ (CFO)	Standard deviation of CFO	0.121	0.120
Mean (Coll. Per.)	Average Collection Period	87.292	79.559
Ln (mean(TA))	Ln (Average Total Assets)	11.639	1.998
Mean (ΔWC)	Average Change in Working Capital	0.016	0.043
Proportion of negative P\L	Proportion of earnings that are negative (= number of negative P\L firm years over total firm years for each firm)	0.214	0.275
Country specific variables			
Liability cap dummy (dlc)	dlc=1 if the country is under a liability cap regime dlc=0 if not[88].	-	-
Disclosure index	Strength of disclosure requirements regime	.616	.191
Supervisor power	Powers of the financial supervisory authority	.452	.244
Judicial effectiveness	Efficiency and integrity of legal environment	8.662	1.449
Note: All variables are scaled by average total assets.			

Table 125 contains the results of a standard correlation test across the variables; there does not appear to be danger of multicollinearity across the variables.

[88] Countries with a liability cap: Austria, Germany, Greece and Slovenia.

Table 125: Correlation matrix: audit quality variables

	σ (Res. 1)	σ (Res. 2)	σ (ΔWC)	σ (P\L)	σ (Sales)	σ (CFO)	Mean (Coll. Per.)	Ln (mean(TA))	Mean (ΔWC)	Proportion of negative P\L	Disclosure index	Supervisor power
σ (Res. 2)	0.44											
σ (ΔWC)	0.47	0.26										
σ (P\L)	0.02	0.26	0.22									
σ (Sales)	0.17	0.18	0.33	0.17								
σ (CFO)	0.12	0.19	0.38	0.56	0.15							
Mean (Coll. Per.)	0.07	0.04	0.14	-0.02	-0.13	0.07						
Ln (mean(TA))	-0.07	-0.2	-0.12	-0.20	-0.08	-0.15	-0.16					
Mean (ΔWC)	0.15	0.07	0.21	-0.05	0.2	0.06	0.21	-0.1				
Proportion of negative P\L	0.00	0.14	0.10	0.41	-0.00	0.27	0.03	-0.21	-0.29			
Disclosure index	-0.13	-0.16	-0.12	0.00	0.03	-0.19	-0.25	0.06	-0.23	0.08		
Supervisor power	-0.02	0.00	-0.07	-0.12	-0.00	-0.18	0.02	-0.05	-0.03	-0.07	0.67	
Judicial effectiveness	-0.03	-0.05	0.03	0.19	0.14	0.05	-0.36	0.1	-0.13	0.11	0.15	-0.41

We first regress each explanatory variable on each set of residuals individually. The results of the single regressions with the firm specific variables are shown in Table 126 and Table 127. We also run individual regressions of the country specific variables on each set of residuals. The results are shown in Table 128.

Table 126: Audit quality: Single variable regressions with firm specific variables- Models 1 and 2

	Model 1: σ (Res. 1)									Model 2: σ (Res. 2)								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
σ (ΔWC)	.168** (24.24)									.058** (12.64)								
σ (P\L)		.012** (2.17)									.043** (11.07)							
σ (Sales)			.014** (6.37)									.008** (6.82)						
σ (CFO)				.021** (4.41)									.025** (7.27)					
Mean (Coll. Per.)					.000** (3.51)									.000 (1.02)				
Ln (mean(TA))						-.001** (-3.78)									-.001** (-6.99)			
Mean (ΔWC)							.051** (3.75)									-.003 (-0.28)		
Proportion of negative P\L								.002 (0.82)									.011** (7.75)	
Liability Cap									.009** (6.30)									.003** (3.16)
Constant	.007** (9.85)	.021** (29.37)	.017** (19.01)	.019** (22.67)	.019** (22.04)	.035** (10.01)	.021** (32.91)	.021** (28.12)	0.02** (29.78)	.009** (17.06)	.011** (24.23)	.01** (18.95)	.011** (19.86)	.014** (23.32)	.030** (13.02)	.014** (33.59)	.012** (23.78)	.014 (30.36)
Adjusted R^2	.219	.001	.026	.009	.001	.006	.006	-0.00	0.018	.071	.055	.03	.024	.000	.022	.007	.027	-.004
Root MSE	.024	.027	.026	.027	.027	.027	.027	.023	0.027	.018	.018	.015	.018	.018	.018	.018	.018	0.018

* Coefficient statistically significant at the 10 level. ** Coefficient statistically significant at the 5 level. Source: London Economics calculations using data sources described above

Table 127: Audit quality: Single variable regressions with firm specific variables – Models 3 and 4

	Model 3: σ (Res.3)									Model 4: σ (Res.4)								
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
σ (ΔWC)	.613** (60.94)									.087** (14.01)								
σ (P\L)		.123** (6.83)									.007 (1.05)							
σ (Sales)			.037** (8.48)									.005** (2.90)						
σ (CFO)				.112** (9.98)									.015** (3.68)					
Mean (Coll. Per.)					.000** (4.95)									.000** (2.78)				
Ln (mean(TA))						-.004** (-5.18)									-.001** (-2.48)			
Mean (ΔWC)							.139** (4.51)									.042** (3.90)		
Proportion of negative P\L								.021** (4.09)									-.002 (-1.15)	
Liability Cap									.017** (5.61)									.009** (8.65)
Constant	.004** (3.57)	.05** (29.4)	.046** (24.65)	.042** (22.58)	.000** (22.92)	.098** (12.00)	.053** (35.06)	.052** (29.90)	.051** (30.90)	.002** (2.70)	.089** (14.98)	.008** (10.47)	.008** (11.08)	.008** (10.47)	.016** (5.70)	.008** (15.94)	.01** (15.95)	.007** (11.70)
Adjusted R^2	.718	.03	.046	.063	.016	.017	.013	.011	.020	.118	.000	.005	.008	.005	.004	.01	.000	.048
Root MSE	.029	.053	.053	.052	.054	.054	.054	. 054	.054	.018	.019	.019	.019	.019	.019	.019	.019	.049

* Coefficient statistically significant at the 10 level. ** Coefficient statistically significant at the 5 level. Source: London Economics calculations using data sources described above

Table 128: Audit quality - Single variable regressions with firm country specific variables

	Model 1: σ (Res. 1)			Model 2: σ (Res. 2)			Model 3: σ (Res. 3)			Model 4: σ (Res. 4)		
	10	11	12	10	11	12	13	14	15	16	17	18
Disclosure index	-.008** (-2.61)			.005** 2.36			-.033** (-4.31)			-.032** (-10.69)		
Supervisor power		-.003 (-1.05)			-.006** (-3.78)			-.014** (-2.93)			-.011** (-6.04)	
Judicial effectiveness			.000 (-0.23)			.000** (3.22)			.001 (1.32)			-.000 (-1.15)
Constant	.027** (12.89)	.023** (17.23)	-.022** (6.04)	.011** (8.03)	.017** (20.18)	.006** (2.58)	.070** (16.43)	.060** (20.85)	.043** (5.94)	.026** (15.86)	.015** (13.60)	.012** (4.32)
Adjusted R^2	.003	.000	.000	.002	.007	.005	.013	.006	.000	.076	.025	.000
Root MSE	.027	.027	.027	.018	.018	.018	.044	.044	.045	.017	.017	.018

* Coefficient statistically significant at the 10 level. ** Coefficient statistically significant at the 5 level. Source: London Economics calculations using data sources described above

We then regress all 10 explanatory variables on the four sets of residuals. Table 129 shows the results for the eight multiple regressions.

We first use the whole sample. We then test the robustness of our empirical results by splitting the sample of companies in two sub-samples according to whether the company marker in the full sample dataset was even or odd.

The standard deviation of the change in working capital is the only variable consistently significant across the different models. These results remain stable when the sample is split.

Importantly, the liability cap dummy is only significant in models 2 and 3 but these results are not robust when split the sample in two.

The values for the adjusted R^2 suggest that model 3 has the highest explanatory power.

Table 129: Multiple regressions - audit quality

Variable	Model 1			Model 2			Model 3			Model 4		
	Full sample	Odd	Even	Full sample	Odd	Even	Full sample	Odd	Even	Full sample	Odd	Even
σ (ΔWC)	.152** (15.79)	.161** (11.89)	.147** (10.38)	.030** (6.24)	.019** (2.53)	.042** (3.36)	.547** (44.93)	.528** (30.32)	.564** (32.85)	.081** (11.89)	.091** (9.68)	.071** (7.07)
σ (P\L)	-.026** (-2.54)	-.031** (-2.23)	-.023 (-1.47)	.053** (7.05)	.06** (5.22)	.048** (4.76)	-.028** (-2.22)	-.024 (-1.37)	-.032* (-1.75)	-.009 (-1.13)	-.014 (-1.39)	-.003 (-.24)
σ (Sales)	.002 (0.94)	.001 (.47)	.003 (.80)	.004** (2.96)	.004** (2.22)	.004** (2.25)	-.007** (-2.87)	-.010** (-3.04)	-.002 (-.67)	-.004** (2.30)	-.003 (-1.61)	-.004* (-1.71)
σ (CFO)	-.000 (-.05)	-.007 (.74)	-.011 (-1.02)	-0.06 (-1.45)	-.007 (-1.26)	-.006 (-.97)	-.003 (-.35)	-.006 (-.59)	.004 (.30)	-.001 (-.27)	.001 (.08)	-.003 (-.41)
Mean (Coll. Per.)	.000* (-1.65)	.000 (-1.08)	.000 (-1.13)	.000** (-2.05)	.000 (-.69)	.000** (-2.20)	.000 (.11)	.000 (.62)	.000 (-.41)	.000 (-.69)	.000 (.18)	-.000 (-1.31)
Ln (mean(TA))	.000 (-.67)	-.000 (-.89)	.000 (-.03)	-.000** (-2.98)	-.001* (-1.93)	-.001** (-2.21)	-.000** (-2.14)	-.000 (-1.20)	-.001* (-1.82)	.000* (-1.89)	-.001 (-1.63)	.000 (-.90)
Mean (ΔWC)	.025 (1.56)	.014 (.61)	.035 (.023)	-.001 (-.13)	-.009 (-.64)	.007 (0.52)	.003 (.18)	-.009 (.03)	-.005 (-.21)	-.006 (-.52)	-.011 (-.71)	.002 (.11)
Proportion of negative P\L	.002 (.64)	.003 (.75)	.001 (.32)	.004** (2.29)	.003 (1.36)	.004** (1.97)	.009** (2.98)	.012** (2.60)	.006 (1.46)	-.001 (-.68)	.000 (.02)	-.002 (-.87)
Liability Cap	.002 (.96)	-.002 (.53)	.003 (.92)	.003** (2.07)	.004** (2.20)	.001 (.62)	.009** (3.65)	.012** (3.47)	.005 (1.59)	.001 (.83)	-.001 (-.64)	.004* (1.78)
Disclosure index	-.044** (-4.86)	-.052** (-4.17)	-.036** (-2.69)	-.034** (-6.16)	-.032** (-3.93)	-.037** (-4.91)	.016 (1.52)	.019 (1.28)	.013 (.91)	-.031** (-4.69)	-.039** (-4.31)	-.023** (-2.40)
Supervisor power	.026** (5.20)	.032** (4.70)	.02** (2.72)	.021** (7.14)	.021** (4.86)	.022** (5.38)	-.002 (-.47)	-.002 (-.21)	-.004 (-.53)	.004 (1.20)	.005 (1.12)	.000 (.35)
Judicial effectiveness	.001** (2.15)	.001 (1.39)	.02* (1.66)	.000* (1.80)	.001 (1.11)	.001 (1.42)	.000 (.32)	.001 (.68)	.001 (-.52)	.000 (.83)	.001 (.02)	.000 (.35)
Constant	.009 (1.18)	.012 (1.19)	.005 (.43)	.013** (2.90)	.012* (1.84)	.014** (2.25)	.008 (.91)	.001 (-.10)	.019 (1.53)	.020** (3.65)	.023** (3.07)	.017** (2.09)
Adjusted R^2	.429	.267	.207	.198	.415	.229	.664	.632	.692	.173	.203	.14
Root MSE	.024	.022	.023	.014	.17	.013	.026	.026	.025	.016	.016	.017
N	1,370	690	680	1,376	695	681	1,353	681	672	1,366	687	679

NOTE: The UK is the baseline country. * Coefficient statistically significant at the 10 level ** Coefficient statistically significant at the 5 level

We can now compare the results of our regressions with the hypothesized relations set out in D&D (2002).

●It was hypothesized that the longer the operating cycle, the lower accrual quality. Our results from the individual regression show that the average collection period has no effect on the standard deviation of the residuals, and consequently no effect on accruals and audit quality. The results from the multiple regressions are consistent with this finding but not significant.

●Our results indicate that the smaller the company the lower accrual quality. The individual regressions indicate a negative relationship between the natural log of total assets and the magnitude of the standard deviation of the residuals. This suggests that larger companies have higher audit quality. Nevertheless, its coefficients in the multiple regressions are either insignificant or unstable across the four models.

●Our results also suggest that the greater the magnitude of sales volatility, the lower accruals quality and hence audit quality. The results from the individual regressions show that an increase in the standard deviation of sales increases the magnitude of the estimation error and consequently decreases audit quality. As for the multiple regressions, the coefficient is positive and robustly significant only in Model 2.

●We find no clear evidence on the relationship between cash flow volatility and accrual quality. The coefficient for the standard deviation of CFO is found to be positive and significant in all the individual regressions, but negative and insignificant in the multiple regressions.

●Our results show strong evidence that the greater the magnitude of accrual volatility (as measured by the standard deviation of the change in working capital) the lower accrual quality. It is worth noting that due to the fact that accrual quality is computed from the residuals from accruals, the two variables are at least partially related by construction.

●Both the individual and the multiple regressions suggest that the greater the magnitude of earnings volatility, the greater the magnitude of the estimation error and the lower accruals quality.

●We find no definite evidence on the frequency of reporting negative earnings on accrual quality, and hence audit quality.

●We find contrasting evidence on the relationship between the magnitude of accruals and accrual quality. The coefficient for the average change in working capital is found to be positive and significant in three of the four individual regressions, but insignificant in all the multiple regressions.

●The estimated coefficients of liability cap dummy are either statistically insignificant or when they are statistically significant, the result is not robust to sample changes. Hence, we can say that there is no statistically robust

evidence that countries with a liability cap tend to have a slightly higher estimation error in accruals and therefore lower audit quality.

●The coefficients for the disclosure index are significant but of contradictory sign in the individual regressions, and significant and negative in Models 1, 2 and 4 in the multiple regression. This suggests that the higher the disclosure index, the higher the audit quality.

●The coefficients for supervisory power are mostly negative and significant in the single regressions, but positive and significant in Models 1 and 2 in the multiple regressions. Hence, we find no conclusive evidence on the effect of supervisory power on audit quality

●The coefficients of judicial effectiveness are mostly insignificant.

Annex 8 The effect of auditor liability regimes on the cost of capital

We analysed the effect of the auditor liability regime on the cost of capital for listed firms in the EU, building on a considerable academic literature on related questions. This section describes:

- Previous literature on the effect of securities laws on capital markets,
- Our choice of dependent variable, in the context of past literature,
- Our independent variables,
- Our regression model,
- Our regression results, and
- Our conclusions.

Previous literature

Two types of previous literature are relevant to our analysis of the effect of auditor liability regimes on the cost of capital. These are work on the correct measure of the cost of capital, and work on the effect of securities laws on the development of stock markets. We now discuss each strand of literature.

The effect of securities laws on national stock markets

A recent series of papers by La Porta and co-authors (see LaPorta et al. (2006) and the references therein) have argued that securities laws affect the success of national stock markets. Under this theory, private agents will be wary of holding minority shareholdings in firms unless they expect the law to prevent majority shareholders or managers from taking a disproportionate share of the firm's profits. The presence of such laws will tend to make investors more confident about holding minority stakes in companies, so that investors will be willing to pay higher prices for shares that are likely to pay a given stream of returns, such as dividends, to shareholders. An increase in the price at which majority shareholders or managers can sell shares, keeping the stream of expected returns constant, is by definition a fall in the firm's cost of capital.

This series of papers has found some empirical support for the argument that securities laws affect the development of stock markets. These authors typically use stock market capitalization as their dependent variable, but a lower cost of capital would tend to induce a larger market capitalization. La Porta et al. (2006) found effects on market capitalization of a variety of legal protections for minority shareholders in a study of 49 countries, including 14 EU countries. The nature of the sample may raise some concern over the interpretation of the results found in this paper, however. The sample of 49 countries includes some at low levels of development, such as Colombia,

Nigeria and Zimbabwe as well as some highly developed countries, such as the U.S., UK and Germany. It is possible that omitted factors that vary across such different countries contribute to the differences in stock market capitalization that the authors attribute to differences in national securities law. Formally, we can say that there is a risk of omitted variable bias to the reported coefficients on different aspects of securities law.

A corollary of the theory that a weak protection for minority investors raises the cost of equity capital is that countries with weaker protections will exhibit higher rates of insider ownership of firms. The logic of this result is that, in countries with weak investor protection, managers' ownership of large equity stakes in their firms signals to minority investors that managers will pay fair dividends to shareholders. Because large ownership stakes in one firm are undesirable to managers from the perspective of risk spreading, this argument implies that managers will require a higher rate of return to hold such concentrated portfolios, thus raising the cost of capital. Empirical support for the predictions that weak investor protection induces greater inside ownership, and that greater inside ownership raises the cost of capital was found by Himmelberg et al. (2002). These authors did not examine the effect of the legal regime surrounding auditors alone, however.

A paper more similar to the current study analyses the effect of securities laws on the cost of equity capital across countries (Hail and Leuz 2006). These authors regress four different measures of the cost of equity capital on aggregated versions of La Porta et al.'s (2006) securities law variables in a sample of firms from 40 countries observed each year from 1992 to 2001. Again it should also be noted that there is some question of whether the coefficient of the strength of securities law can be interpreted at face value when the sample includes both highly developed and less developed countries.

Overall, the recent literature has made advances that greatly assist a study of the effect of a particular securities law on the cost of equity capital. However, particularly due to the heterogeneity of the samples used and the lack of focus on specific laws, rather than aggregate measures of the entire body of securities law, the previous literature does not appear to provide lessons for policymakers in developed countries who might wish to fine-tune their securities laws in the optimal manner.

Measures of the cost of capital

A firm's cost of capital is, conceptually, implied by the market price of its securities relative to the future payments these securities promise to pay. Thus, the cost of capital is in principle calculable from both equity and bond prices, although only bonds carry explicit promises of associated payment streams.

It is in principle straightforward to calculate the cost of capital or yield on corporate bonds. The yield is a function of the bond's market prices and the payment schedule it promises. In practice many corporate bonds have

option-type features such as being callable, which complicates the calculation of yields. A more serious problem with analysing bond yields in practice is that many corporate bonds are traded rather infrequently, since insurance companies and other institutional investors hold them until maturity. Thus, current data on the yields of many corporate bonds are often not available.

In part due to these problems with bond yield data, many academic works study the effect of securities law on the cost of equity capital. A general framework for considering the cost of equity capital is to consider the relationship between the price of equity and the dividend payments the firm makes to shareholders. In a simple model, this relationship is as follows:

$$P_o = \sum_{i=1}^{\infty} \frac{DIV_i}{(1+r)^i}$$

where P_0 is the current share price, DIV_i is the dividend payment expected in period i, and r is the implicit cost of capital. The main problem in defining the cost of capital in this case is that the future stream of dividends DIV_i is unknown, and market expectations of this stream may be observed one or two years into the future at most. Previous literature has used different assumptions about expected future dividends (or more broadly, expected future returns to equity) to construct different methods of the implied cost of capital.

The leading manner of constructing a cost of equity capital is the 'Gordon Formula' used in corporate finance textbooks and in academic studies (such as Domowitz and Steil, 2001). This formula is derived by assuming in the framework above that $DIV_i = DIV_1 \times (1+g)^{i-1}$, where DIV_1 is the next expected dividend and g is an assumed constant growth rate of dividends. In this case the implied cost of equity capital is

$$r = \frac{DIV_1}{P_0} + g .$$

Using this Gordon formula as the only measure of the cost of capital could be misleading in practice because some firms typically do not pay dividends. For example, the Microsoft Corporation has never paid a dividend on its stock, preferring to return value to shareholders by buying its own stock, thus increasing the price of outstanding stocks. This is typically a more tax-efficient method of returning earnings to shareholders than paying dividends.

From the point of view of the current study, the application of the Gordon formula is even more problematic, as no useful proxy variable for dividend growth rate is available. In particular, Bloomberg and Thompson Financial, the two providers of such data, can only offer historical 5 years growth rate in reported earnings per share. In addition, this variable is only available for a very small fraction of companies in our sample. Finally, if used as a proxy to dividends growth rate, it leads to excessively low values for the companies'

cost of capital. Therefore, we decided to look for other measures of the cost of equity capital.

The economic literature suggests other forward-looking measures of the cost of equity capital, based on other assumptions about future dividends or returns to shareholders. Hail and Leuz (2006) list four such measures suggested in previous literature. All these four measures come from the same basic idea of substituting "price and analyst forecast into a valuation equation and to backing out the cost of capital as the internal rate of return that equates current stock price and the expected future sequence of residual incomes and abnormal earnings."

The expression best fitting our data expresses the cost of capital as a function of the price to earnings growth ratio or PEG ratio derived by Easton (2004). The PEG ratio is a measure of the degree to which a firm's shares are under or over-valued. Easton (2004) defines it as follows:

$$PEG = P_0 / (EPS_2 - EPS_1) ,$$

where P_0 is again the current share price, and EPS_1 and EPS_2 are forecast earnings per share in the next two periods. The logic of using the PEG value as a measure of a stock's valuation is that expected earnings growth over the near future contains a signal of earnings growth in periods further into the future.

The formula for the cost of capital can be backed out from the valuation equation that also uses the PEG ratio. Easton (2004) shows that under constant expected abnormal growth in accounting earnings, the cost of capital implicit in the current share price is

$$r = \frac{1}{2}\left(\frac{DIV}{P} + \sqrt{\left(\frac{DIV}{P}\right)^2 + 4 \times \frac{1}{100 \times PEG}} \right).$$

We use this measure of the cost of capital as our dependent variable in the analysis below, with the slight variation that the version of PEG available from Bloomberg is based on the average growth rate expected over the next five years rather than the next two years. As Easton notes, a normal PEG ratio is often considered to be one, in which case the implied cost of capital would be 0.1 or 10%.

An earlier strand of literature used backward-looking measures of the cost of capital. Essentially, these papers assumed that if the average return on equities during a historical period was x%, then the cost of equity capital was also x%. This is a problematic assumption, however, unless the return to equities is observed over a very long period. Over shorter periods, any favourable shocks to economies would tend to raise equity returns but reduce the cost of capital. In this case, assuming that the cost of capital equalled the rate of return on equities would be misleading. For example, it is unlikely that the cost of capital in the U.S. in the 1990s was actually in the order of 20%

per year. Elton (1999) discusses this and other problems with using backward-looking measures of the cost of capital.

Even though the academic literature has moved from using backward-looking measures of the cost of capital to using forward-looking measures, there is little agreement as to which is the optimal forward-looking measures. Standard practice, as in Hail and Leuz (2006), is to use a variety of similar measures of the cost of equity capital as the dependent variable in similar regressions, thus testing the sensitivity of the results to the precise formulation used. Since our database does not support the other cost of capital measures listed in Hail and Leuz (2006), we are using the expression derived by Easton (2004) as the only measure of cost of capital in our analysis.

Dependent variable

As we explained above, due to limitation of the Bloomberg data, we use only one measure of the cost of equity capital in our analysis; the one derived from the price-earnings growth (PEG) ratio in the manner suggested by Easton (2004) and described above.

Table 130 below describes our data on the cost of equity capital derived from the PEG ratio. The second column shows the number of firms in our sample from each country for which we have data. The third column shows the average cost of capital for these firms and for the entire sample. The average costs of capital shown are unconditional averages, meaning that no adjustment is made for the distribution of firms by sector, beta or other firm-specific variable within country. The fourth column shows the average cost of capital by country conditional on all the firm-specific controls (obtained from the coefficients on country dummy variables in an appropriate regression). Despite conditioning on these variables, the mean costs of capital vary considerably across countries, suggesting there is a considerable amount of measurement error in our dependent variable.

As Table 130 shows, our sample contains fairly few observations for some EU countries, and no observations for the nine EU countries not listed here. This is for two reasons. First, there are fairly few publicly listed companies in some countries. Second, Bloomberg does not list a PEG ratio for all publicly listed companies, due to the absence of IBES forecasts of future earnings per share for some companies. The combination of these factors means that few or no company PEG ratios are available for several countries.

We express the cost of capital as a required return in percentage points. Thus, the average cost of capital in our sample is 8.04%.

Table 130: Cost of capital, country averages			
Country	**No. of Firms**	**Unconditional Average Cost of Capital (%)**	**Conditional Average Cost of Capital (%)**
Austria	8	7.58	6.94
Belgium	39	9.91	9.45
Czech Republic	4	8.26	7.64
Germany	92	8.76	7.97
Denmark	32	6.46	5.99
Spain	37	8.73	8.22
Finland	42	6.55	5.87
France	151	7.12	6.73
Greece	5	14.67	13.62
Hungary	4	8.05	7.54
Ireland	5	8.61	7.95
Italy	44	9.18	8.56
Netherlands	39	9.64	9.07
Poland	6	15.09	17.50
Sweden	91	6.12	5.58
United Kingdom	261	8.34	7.81
Total	**870**	**8.04**	

Note: the rate of return is estimated as $r = 0.5[DIV/P + ((DIV/P)^2 + 4(100*PEG)^{-1})^{1/2}]$, where $PEG = P/(EPS_2 - EPS_1)$, EPS_1 and EPS_2 are forecast earnings per share in the next two periods, DIV is the dividend on the share and P is the current price of the share. This approximation for the rate of return is explained in Easton (2004).
Source: Bloomberg, latest data as of April 25, 2006.

Independent variables

Our regressions below use three types of independent or explanatory variables. The first type includes the indicator of the auditor liability regime, the variable of particular interest in this study. The second type controls for the factors that are fixed within each country. The third type controls for the factors that vary across firms, and thus within each country.

Measures of the auditor liability regime

Our primary measure of the auditor liability regime is a dummy variable reflecting whether a country has a capped or unlimited auditor liability regime. The countries with a cap are Austria, Germany and Greece in our sample and dummy variable is equal to one for these countries.

La Porta et al. (2006) provide data on the legal environment surrounding liability claims by shareholders against firm auditors, collected from experts in securities law in each of the countries in their sample. The version of their article published in *The Journal of Finance* describes a compound liability

variable that measures the ease with which shareholders may recover funds from issuers, directors, distributors and auditors in the event of a false disclosure by any of these parties. However, the working paper version of the article provides a "burden on accountants" variable measuring the liability position of auditors alone. We include this variable in our analysis below as an alternative to our 'capped liability regime' dummy.[89]

The "burden on accountants" variable is an index of the procedural difficulty in recovering losses from a firm's accountant in a civil liability case for losses due to misleading statements in the audited financial information accompanying the prospectus. This index equals:

1 in countries where investors are only required to prove that the audited financial information accompanying the prospectus contains a misleading statement,

2/3 in countries where investors must also prove that they relied on the prospectus and/or that their loss was caused by the misleading accounting information,

1/3 in countries where investors must prove that the accountant acted with negligence and that they either relied on the prospectus or that their loss was caused by the misleading statement or both, and

0 in countries where restitution from the accountant is unavailable or the liability standard is intent or gross negligence.

The "burden on accountants" variable is conceptually somewhat different to the question of whether a capped or unlimited liability regime exists. The La Porta variable attempts to measure the ease of winning a claim in court, whereas the dummy for the capped liability regime reflects more the size of damages payable once court cases have been won or settlements have been made.

Country-specific controls

In principle the nominal cost of capital will depend on expected inflation rates. Since these are generally difficult to observe, but inflation is typically persistent within countries, we include a control for national inflation rates between 2004 and 2005. We take the change in the Harmonized Index of Consumer Prices (HICP) between these years from Eurostat.

We also include the log of the level of GDP per capita, in 2005, as an explanatory variable. Again we take this variable from Eurostat. La Porta et al. (2006) find that stock market capitalization is positively related to national GDP per capita. We might expect this variable to pick up the effects of various types of development in securities legislation that other variables do not capture.

[89] Neither version of the La Porta et al. paper analyses the effect of the auditor liability regime separately.

We also include three explicit measures of the legal and regulatory framework surrounding shareholding used by La Porta et al. (2006). These are summary indices of the disclosure regime, of the powers of the financial supervisory authority, and of the general effectiveness of the judiciary. In each case a higher value of the index implies a greater level of protection for minority shareholders against misleading disclosures or expropriation by managers and majority shareholders.

We now describe the 'disclosure', 'supervisor power' and 'judicial effectiveness' variables in brief, and refer readers to the descriptions provided by La Porta et al. (2006) for further detail.[90]

The disclosure index is the average of six component variables measuring:

- legal requirements on the delivery of securities prospectuses to investors prior to securities issuance,
- an index of disclosure requirements regarding the compensation of directors and key officers in securities prospectuses,
- an index of disclosure requirements regarding the issuer's equity ownership structure,
- an index of prospectus disclosure requirements regarding the equity ownership of the issuer's shares by its directors and key officers,
- an index of the prospectus disclosure requirements regarding the issuer's contracts outside the ordinary course of business, and
- an index of prospectus disclosure requirements regarding transactions between the issuer and its directors, officers and large shareholders.

The disclosure index takes values between 0 and 1. A higher value of it corresponds to a higher level of disclosure requirements imposed on the firms.

The 'supervisor powers' index is the average of four component variables, measuring

- whether a majority of the members of the supervisory authority are unilaterally appointed by the executive branch of government,
- whether members of the supervisory authority have security of tenure,

[90] In particular, see the notes to the dataset that La Porta et al. (2006) provide at http://post.economics.harvard.edu/faculty/shleifer/papers/securities_data.xls.

- whether supervisory responsibility for commercial banks and stock exchanges is split between government agencies, and
- Whether the supervisor can issue regulations without prior approval of other government authorities.

The 'supervisor's power' index also takes values between 0 and 1, with larger values corresponding to more real authority in the hands of the supervisor, i.e. it can work more or less independently from the appointing authority.

The 'judicial effectiveness' index is an assessment of the efficiency and integrity of the legal environment as if it affects business, and particularly foreign firms, produced by the agency International Country Risk and referring to the period 1980 to 1983. It also takes values between 0 and 10, with higher values corresponding to higher efficiency levels.

Firm-specific controls

Our regressions also include several controls for the risk characteristics of individual firms. Firms whose returns create more risk in investors' portfolios would be expected to face higher costs of capital. These controls are largely those included in previous academic studies of firms' cost of capital, such as Hail and Leuz (2006). Data on all these controls were taken from Bloomberg.

In the Capital Asset Pricing Model (CAPM), the 'beta' of a stock, or the correlation between the return on the stock and that of the market overall is the key variable affecting a firm's cost of capital. Thus, we include firm betas as a control.

Were the CAPM a true definition of reality, a stock's beta and the national risk-free rate and price of market risk would be sufficient statistics to explain each firm's cost of capital. However, following other studies such as Hail and Leuz (2006) and Gebhardt, Lee and Swaminathan, (2001), we also include other common proxies for firm risk. These are:

(i) The standard deviation of the firm's (log) share price at an annualised rate, calculated from price changes over the previous 90 days. Firms with more volatile share prices would be expected to have lower share prices and thus higher returns to capital, although the firm's beta should in principle capture this effect.

(ii) The book-to-market ratio, the ratio of the firm's accounting or balance-sheet value to its market value. Arguably firms with higher book to market ratios have been undervalued by markets, and have higher costs of capital than would otherwise be the case.

(iii) The ratio of total debt to total assets. It measures the firm's leverage or indebtedness. More highly indebted firms are at greater risk of going bankrupt in the event of a disturbance to their cash flows, which one would expect to reduce their share prices and thus increase their implicit costs of equity capital.

(iv) The ratio of total debt to total equity is another measure of the firm's leverage or indebtedness. As noted above, more highly indebted firms are at greater risk of going bankrupt in the event of a disturbance to their cash flows, which implicitly increases their costs of equity capital.

Finally, all our regressions also include dummy variables for the industry sector of each firm. These are dummies for the ten sectors identified by the Global Industry Classification Standard and employed by Bloomberg, namely Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Healthcare, Financials, Information Technology, Telecommunication Services and Utilities.[91]

Summary statistics on the independent variables

Table 131 overleaf shows summary statistics for all our independent variables. We have 860 observations of firms' cost of capital. However, we lack data on some of the country-specific controls for these companies, as this is missing in Bloomberg. The La Porta variables are also available for a smaller number of observations, since these cover only 14 EU countries, comprising the EU15 minus Luxembourg.

Table 131: Descriptive statistics: cost of capital

Variable	No. Obs.	Mean	Std. Dev.	Minimum	Maximum
Country-specific variables					
Inflation rate 2004-5, %	3,877	1.97	0.63	0.77	6.89
GDP per capita (€) in 2005	3,877	27,201.91	7,185.61	5,545.05	62,938.46
La Porta "Burden on accountants" index	3,561	0.48	0.26	0	1
Disclosure index	3,561	0.66	0.17	0.25	0.83
Supervisor index	3,561	0.40	0.26	0	0.88
Judicial effectiveness index	3,561	9.10	1.21	5.5	10
Firm-specific variables					
Beta	3,441	0.65	0.34	-2.95	2.59
Volatility	3,395	36.44	28.96	0.587	618.10
Book-to- market ratio	3.877	144.79	1,666.7	0.001	44,420.75
Total debt-to-total assets	3,877	19.70	18.53	0	160.53
Debt-to-equity ratio	3,812	124..694	643.92	-3,845.65	31,866.23

Note: The debt to equity ratio and book value per share can both be negative as total equity includes retained earnings that can be negative.

[91] The current GICS classifications are explained at http://www.msci.com/equity/GICS_map2006.xls.

Table 132 below shows the correlations between our country-specific variables. Interestingly, the La Porta "Burden on accountants" index has a strong negative correlation with having a capped liability regime.

Table 132: Correlation matrix of country-specific variables: cost of capital

	Capped auditor liability regime	La Porta "burden on accountants" index	Disclosure index	Supervisor index	Judicial effectiveness index	Inflation rate
La Porta "Burden on accountants" index	-0.73					
Disclosure index	-0.66	0.46				
Supervisor index	-0.23	-0.21	0.11			
Judicial effectiveness index	-0.05	0.32	0.26	-0.73		
Inflation rate 2004-5	0..09	0.10	-0.05	0.05	-0.47	
Log GDP per capita in 2005	-0.16	0.21	0.27	-0.38	0.76	-0.51

Regression model

Our regression approach is cross-sectional, in that our data have no time-series dimension. Our dependent variable and some of our independent variables vary within countries. Some of our independent variables do not vary within each country, however. It is important to remember that, in a sample containing n observations from m countries, only m explanatory variables (including the constant) can be fixed within countries.

Formally, we run various versions of the following regression:

$$r\_peg_{ij} = \alpha + \beta\, audreg_j + \gamma_1\, inf\_2005_j + \gamma_2\, lgdpc\_2005_j + \theta\, Z_{ij} + \omega\, R_j + \psi\, I_k + \varepsilon_{ij}$$

where:

i is a firm index and j is a country index;

r_peg_{ij} is the cost of equity capital for firm i in country j;

$audreg_j$ is the index describing the auditor regime in country j, and for which we are going to use either the index $liab\_cap_j$ measuring whether an audit orregime is capped or unlimited or variable bdn_acco measuring the "burden on accountants" as defined by La Porta et al. (2006);

inf_2005_j is the rate of inflation in country j;

$lgdpc\_2005_j$ is the logarithm of the GDP per capita in country j;

Z_{ij} denotes the vector of firm specific controls for the risk properties of a stock, and includes the beta, volatility, book-to-market ratio, total debt to total equity ratio, total debt to total assets associated to firm *i* in country *j*;

R_j denotes the three explicit measures of legal and regulatory framework surrounding shareholding used by La Porta et al.'s (2006). These three variables are the indices of disclosure requirements (*disclose*), supervisor powers (*supervisor*) and judicial effectiveness (*eff_jud*) described earlier in this Annex; and

I_k denotes industry sector dummies.

One choice we faced over functional forms is whether to use nominal or real cost of capital as a dependent variable. Assuming we had an appropriate measure of expected inflation, π, we could use real returns as a dependent variable by using the regressand $r-\pi$, where r is the nominal cost of capital. This would be equivalent to fixing the coefficient of expected inflation at one in a regression of the cost of capital.

Following Hail and Leuz (2006), we use nominal returns as the dependent variable, and include inflation as a right-hand-side control variable. This allows greater flexibility in the functional form, since the coefficient on inflation is not fixed to one.

A further question we faced was whether to use variables in levels or transform them into logs. We chose to transform only GDP per capita from a level to a logarithm and, following Hail and Leuz (2006), to keep our dependent variable of the cost of equity capital in levels form.

Regression results

The results of the various regressions of the cost of capital on the auditor liability regime and various controls are reported in Table 133 below.

Our analysis shows no significant effect of the auditor liability regime on the cost of capital. We report the detailed results from different regression models in each of the three columns of Table 133. We now explain the results shown in each column.

Model 1

In Model 1, we use the index $liab\_cap_j$ of a capped or unlimited auditor liability regime for country *j* to capture the effect of the auditor regime $audreg_j$ in that country. As this index can only take value 0 for unlimited and 1 for capped regime, technically it is a dummy variable. In this model we skip the three explicit measures of legal and regulatory framework surrounding shareholding used by La Porta et al. (2006). Our results are presented in column 1.

Since the values of the capped auditor liability regimes is zero for countries with a regime of unlimited auditor liability, a positive coefficient on this

dummy implies that the cost of capital is higher in countries with a capped liability regime than with a regime of unlimited liability. We find no significant effect of a capped liability regime.

The coefficients on several of the other controls are of the expected signs. This confirms that the regression is sensible overall and that there is some 'signal' in the dependent variable as well as noise. The coefficient on inflation is close to 1 and statistically significant, as one would expect if the rest of the model explains the real rather than nominal cost of capital. We also ran a form of the regression above leaving out the insignificant firm-specific controls such as volatility, book to market ratio and total debt to total assets ratio and obtained very similar results.

Model 2

In Model 2, we run the same regression but use the "burden on accountants" index *bdn_acco* used by La Porta et al. (2006) for the auditor regime variable $audreg_j$. Again, we drop the three explicit measures of legal and regulatory framework surrounding shareholding used by La Porta et al. (2006). Our results are displayed in column 2.

We find a positive coefficient on the "burden on accountants" index, which is significant at the 10% level. However, this finding is not robust as the coefficient becomes insignificant when we rerun the regression without the insignificant firm-specific controls such as volatility, book to market ratio and total debt to total assets ratio. Therefore, we find no significant relationship between the cost of capital and the legal hurdles investors face in recovering funds from auditors in the event of a misleading disclosure in an audited financial statement.

Model 3

In Model 3 we return to our first specification when the auditor regime is characterized by the index $liab\_cap_j$ of the auditor liability regime being capped or not. In addition to the variables in Model 1, we also include the three explicit measures of legal and regulatory framework surrounding shareholding used by La Porta et al.'s (2006). None of these control variables is intended to capture the auditor liability regime in each country, however. Again, we skip insignificant firm-specific controls such as volatility, book to market ratio and total debt to total assets ratio.

We do not include the "burden on accountants" index *bdn_acco* used by La Porta et al.'s (2006) in this model because this variable and the capped liability variable aim to capture the same phenomenon and are indeed highly correlated (see Table 132).

Once these controls for the wider regulatory framework are included, the coefficient on the capped auditor liability regime dummy is now negative but still not significant.

The coefficients on the controls for the strength of the regulatory framework are all significant at least at the 10% level. However, their signs are not all as one would expect. The coefficient on the index of disclosure requirements is negative, consistent with the starting hypothesis in La Porta et al. (2006) that those countries that require more transparent behaviour of managers and directors will have higher equity prices and thus a lower cost of capital. The coefficients on the indices of the financial supervisors' powers and the effectiveness of the judiciary across countries are positive, however, which contradicts the general hypothesis that stronger protections for minority investors lead to a lower cost of capital.

To test whether the positive coefficient on judicial effectiveness reported in column 3 was robust, we ran another regression of the cost of capital on this judicial effectiveness variable and all the other controls included in model 3 except those relating to the legal and regulatory framework. Thus, this regression tested whether the positive coefficient on judicial effectiveness was only a partial effect conditional on other aspects of the legal regime. The coefficient on judicial effectiveness was again positive and strongly statistically significant in this regression, however. This implies that this variable is consistently associated with a higher cost of capital, in contrast to La Porta et al. (2006)'s expectations.

Table 133: Regressions of cost of capital on auditor liability regime

	Regression Model		
Independent variable	**1**	**2**	**3**
Auditor liability regime			
Capped auditors' liability	0.43 (1.22)		-0.59 (0.48)
La Porta auditor liability regime		0.76 (1.58)	
Country-specific controls			
Inflation	1.03** (3.39)	1.13** (2.74)	1.94** (5.25)
Log GDP per capita	-2.65 (-1.39)	-2.21 (-1.10)	-4.98 (-1.83)
Disclosure requirement regime			-2.54** (-2.29)
Financial supervisor powers			1.67* (1.72)
Judicial effectiveness			1.03** (3.20)
Firm-specific controls			
Beta	0.73 (1.39)	0.71 (1.43)	0.64 (1.28)
Volatility	0.003 (0.17)		
Book to market ratio	-0.0001 (-1.05)		
Total debt to total equity ratio	0.0006* (1.73)	0.0005* (1.91)	0.0005* (1.80)
Total debt to total assets ratio	-0.003 (-0.46)		
Summary Statistics			
R^2	0.097	0.092	0.11
N	834	829	828

Note: all regression models include controls for firm sector.
The numbers in the parentheses are the robust t-values, controlling for heteroskedasticity in the error terms.
* Coefficient statistically significant at the 10% level
** Coefficient statistically significant at the 5% level
Source: London Economics calculations using data sources described above.

Conclusion

Our regression analysis of the effect of the auditor liability regimes leads to two main results.

First, we found that the auditor liability regime has no impact on the cost of capital. This result is robust as we reached the same conclusion by running many variations of the regressions presented above, and we examined both the effect of the auditor liability regime as well as the effect of the "burden on accountants" index defined by La Porta et al. (2006).

Second, the cost of capital is strongly affected by the strength of the legal and regulatory framework surrounding securities in each country. In particular, disclosure requirements decrease the cost of capital, whereas supervisor powers and judicial effectiveness increase it.