Conceptual Foundations of Audit:
Quality, Independence, Efficiency, Signaling and Competition

Shyam Sunder

Yale University

Shyam.sunder@yale.edu

Dae-Hee Yoon

Yonsei University

Dae-hee.yoon@yonsei.ac.kr

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Abstract

Independent external audit of financial reports of public organizations is mandatory in many jurisdictions in the world. Regulatory regimes attempt to maintain and enhance the effectiveness of audits so they can serve their fundamental purpose of facilitating capital investments through more informative financial reports. Regulations seek to improve the effectiveness of financial reporting by promoting audit quality and competition in the audit market, and by restricting managers and auditors from taking actions which may lower the information quality. In this paper, by using two examples of South Korea and U.S., we analyze the five conceptual foundations of audit: (1) various aspects and meanings attached to audit quality; (2) the challenges of ensuring the reality and appearance of auditor independence; (3) efficiency of resources deployed in audit; (4) the consequences of regulatory restrictions on financial reporting and audit options exercised by companies when they deprive managers of stronger companies of the opportunity to credibly signal their strength through conservative reporting; and (5) the value and the multifarious consequences of promoting competition in the audit market. Our analysis of the definition of audit quality, and the approaches to independence, efficiency, signaling, and competition provides potentially useful material for regulatory policy.

Keywords: audit quality, auditor rotation, regulation, signaling, competition

JEL Codes: M42, M48

1. Introduction

Independent verification of accounts is a valued feature of financial reporting in presence of moral hazard in agency relationships. In the third century B.C.E. public administration Sanskrit classic Arthasastra, Kautilya characterized what we now call the agency problem: "Just as it is impossible to know if a fish is drinking water it is swimming in, so it is impossible to find out when a government servant is stealing king's wealth." (2.9.37) [1]. Accordingly, Kautilya recommended separation between the duties of executive and accounting officers: "When the account officers come with their sealed account books and works officers bring actual balances in sealed containers, he (the superintendent) should impose restrictions, so the two sets of officers are not allowed to converse among themselves. (2.7.17-18)[2]

The conceptual foundations of auditing include (1) quality of audit service in process and reporting, (2) credibility rooted in real and apparent independence of the auditor, (3) efficiency of audit resources deployed, and (4) information disseminated to the outside parties by the company, whether deliberately or unintentionally, through its own choices within the set permitted under the extant rules and regulations. Finally, (5) while competition in markets for goods and services is generally associated with increased societal welfare, difficulty of assessing the quality renders increased competition in markets for audit services a policy with more complicated consequences.

First of two dimensions of quality concerns two parts of audit: (1) the process to gather, analyze, and evaluate information about the state of accounts, and (2) auditor-management

[1] Kautilya (https://ia800308.us.archive.org/23/items/arthasastraofkou014552mbp/arthasastraofkou014552mbp.pdf).
[2] Kautilya (https://ia800308.us.archive.org/23/items/arthasastraofkou014552mbp/arthasastraofkou014552mbp.pdf).

communication, negotiation, and final decision that lead to the audit report. The second dimension of audit quality is the choice among the perspectives of one or more parties on audit quality. Non-managerial shareholders, managers, auditors and regulators may view quite differently what the good quality of audit is. Section 2 explores these multiple perspective issues of audit quality that make it difficult to arrive at a unique broadly acceptable definition.

Given the legitimate conflicting interests of various parties, and their asymmetric access to various relevant pieces of information, independence of auditor lies at the heart of raison d'etre of outside audit. Although the concept of independence is simple and obvious enough even to laymen, there are continual efforts motivated by narrower self-interests to dilute independence of auditors by encroaching on its meaning through attempts to redefine it technical terms that can be subjected to arguments and debate. Perhaps it is useful to recall how Wilcox (1952) described independence of auditors in the American Institute of Certified Public Accountants' *CPA Handbook* after the Institute had persuaded U.S. Congress to award its members the franchise to audit publicly traded companies in the US through securities legislation in 1932-33. Recall that the draft bill in the U.S. Senate had proposed that the Government Accounts Office or GAO conduct such audits:

> "Independence is an essential auditing standard because the opinion of the independent accountant is furnished for the purpose of adding justified credibility to financial statements which are primarily the representations of management. If the accountants were not independent of the management of his clients, his opinion would add nothing. Those who rely on the credibility he furnishes are apt to be creditors or investors, or sometimes employees, customers, or government agencies. It is for their assurance that independent expert opinions are provided, and the accountant incurs a profoundly professional obligation to this unseen audience even though he does not know who they are. He must fulfill this obligation even when this means opposing or denying the wishes of those who have employed him, and who, he knows, may cease to do so. It is a requirement unparalleled in any other field. It places such demands on the integrity of the accountant that there are those who doubt that it is or can be achieved, yet the very *prestige* of the accounting profession today is evidence that it is achieved. The continued prestige and usefulness of accounting depends in large measure on its continued achievement." (Wilcox, p. 8).

Efficiency of a device or process is the ratio of its output to the necessary inputs. Output of audit is the decrease in errors and misrepresentations in accounts and financial reports, and the consequent increase in their credibility in eyes of those who pay for, and use the audited reports in their decisions and work. Inputs to audit include not only the fees which shareholders (through company's revenues) pay the auditor for the latter's labors, but also the managerial time for engaging with auditors as well as directorial time necessary for working with the auditors.

From auditor's point of view, efficiency appears in a different light. Auditor receives a (mostly negotiated) fee from the company, and must decide on the total spending on audit work, and distribution of the total among various elements of audit. The remainder is the take-home income to the auditor. From auditor's economic point of view, efficiency could be defined as the fraction of the total fee the auditor can take home. This definition implies that the auditor would do the least amount of work possible. An alternative is to use a more technical definition of efficiency as the ratio of reduction in auditor's exposure to liability (of being sued for a bad or failed audit) to the cost of resources spent on the audit. Under this definition, it would not make sense for the auditor to spend no resources on audit work. On the other hand, when the incremental gain in the form of reduced chances of finding errors decline to exceed the incremental audit costs, the auditor has to stop spending additional resources on the audit.

Note that this notion of efficiency is likely to yield an intermediate level of resource deployment to audit work, somewhere between no work at all, and zero income to the auditor. A large part of the problem of defining legal and economic liability of auditor for bad or failed audits concerns finding such an intermediate solution to the problem—not an easy task.

Signaling is the fourth fundamental, albeit often ignored, concept behind auditing. Analyses of auditing have been dominated by regulatory considerations, which in turn, are dominated by narrowing the options available to auditors and managers in their decision making. This regulatory mind-set has two limitations. First, the range of circumstances in which managers and auditors may find themselves is vast and innumerable with a fractal character. It is not possible for even the most knowledgeable, sincere, intelligent and diligent regulator to recommend a course of action in all these situations. Even if the regulator could specify a recommended course of action for a vast number of situations, managerial discretion in choosing the transactions and their classification can be used to defeat the intent of the regulation (see Dye et al. 2015).

But there is also a more fundamental problem. By reducing the set of options auditors and managers have for their financial reporting decisions, regulators close the door on signaling, which is a credible means of communicating good information to others in such a way that those who do not have good information cannot imitate (Spence 1973). Regulators are generally inclined to think that they fulfill their duty by restricting reporting options of companies to a narrower set.

Finally, the fifth foundational concept we consider concerns a characteristic of the market in which audit services are traded (unlike the above-mentioned four attributes of auditors or their work itself). The extent and nature of competition in the market for audit services is an important determinant of the quality and price of the service. Unlike the markets for most goods and services where the quality is readily ascertainable by the buyer, audit quality is hardly visible, especially to its real buyers—the non-management investors. This special feature of audit (and some other) market renders promotion of competition in audit markets a policy of doubtful benefits and almost certain harm. We return to this and other issues in the following sections.

2. Audit Quality

Audit quality is generally defined as an ex-ante concept which is the likelihood that a firm's audited financial report does not have misstatement. In contrast to the ex-ante audit quality, in practice, investors often understand the audit quality as the amount of misstatement revealed in ex post: as the amount of revealed misstatement becomes smaller, the audit quality is higher. The ex-ante and the ex-post concepts of audit quality interact with each other. The higher ex-ante audit quality is more likely to result in the higher ex-post audit quality. On the other hand, the more emphasis of investors and regulators through implicit and explicit penalties on the ex-post audit quality motivates auditors to enhance the ex-ante audit quality. In this paper, we focus on the ex-ante audit quality because it is associated with high ex-post audit quality on average.

In this section, we shall consider (1) decomposition of audit quality into audit process and reporting (2) heterogeneity of managers and auditors (3) various perspectives on audit quality (4) equilibrium audit quality level.

Decomposition into Audit Process and Reporting

Auditor's work can be decomposed into two components; we shall label them the *audit process* (i.e., gathering of information from the field and records, and analysis of the information gathered to serve as a basis of communications with the directors and the management) and the *reporting decision* (communications with the management and directors and the associated negotiations ending in issuance of an audit opinion). The audit process includes evaluating internal controls and carrying out substantive tests to confirm balances in a financial statement. In the reporting decision, an auditor summarizes their findings from the audit process and chooses the outcome of the audit based on evidence and negotiations with the management. Both these components determine the quality of the audit. Similarly, DeAngelo (1981) defines audit quality as "the market assessed joint probability that a given auditor will both discover a breach in a client's accounting system, and report the breach."

Since each of these two components of audit contributes to its quality, it is better to assess the contribution of each component, instead of the usual practice of considering only the aggregate quality of audit as a whole. The two components of audit interact with each other, and are not totally independent. But simple aggregation of two components potentially conceals the weaknesses or strengths of the components; separate consideration of the two components may assist us in getting a clearer picture and help devise ways to raise the overall quality. That is, if the quality in the audit process is low, any error or fraud may not be detected and then the subsequent quality reporting decision does not matter. On the other hand, if the quality in reporting decision is low due to the compromised auditor independence, the quality in the audit process may not help enhance the overall audit quality.

A similar reasoning may apply to the ongoing debate on the consequences—benefits as well as harm—from mandatory rotation of auditors. Proponents of mandatory rotation argue that humans are social animals who tend to befriend those they work with. Consequently, during a long period of engagement, auditors tend to become less vigilant and less skeptical of the managers, and mandated rotation will bring a set of fresh and independent set of eyes to examine financial reports of their client companies, resulting in higher quality audit. Opponents of mandatory rotation, on the other hand, argue that over time auditors gain a better understanding of the business and structure of the company organization and this knowledge enhances their ability to deliver audits of higher quality; mandatory rotation will result in periodic loss of this knowledge, thereby resulting in lower audit quality.

Decomposing the auditing into process and reporting may help better analyze the consequences of mandatory rotation by focusing on each component. The proponents of mandated rotation tend to focus on the reporting decision and think that greater independence associated with rotation will raise the quality of reporting decisions. The opponents of rotation tend to point to the potential for adverse effect of rotation on quality in the audit process. Following this argument, potentially adverse consequences of rotation on the audit process need more attention. To mitigate the adverse consequences, the example of quality control of monitoring audit process would include to check whether enough resources (e.g., audit hours) are put in the process and whether audit standards are carefully followed as revealed in the working papers. Conversely, if regulators decide not to impose mandatory rotation, the quality of the reporting decisions needs more attention.

Heterogeneity of Managers and Auditors

Instead of assuming that all company managers and all auditors have homogeneous motivations, preferences, abilities and tendencies, it is worthwhile to reflect on consequences of heterogeneity across individual managers as well as auditors. Some managers are more competent and less opportunistic than others. Similarly, some auditors have better judgment, diligence, and professionalism. If the managers are competent and not opportunistic, investors can get high quality financial reports even if the auditor is weak. Someone may be worried about Type I error which means that the competent manager is reported as incompetent by incompetent auditors. However, in practice, this case does not occur because the competent manager will respond to the wrong report and correct it in the audit and reporting process. Therefore, we need to focus on the incompetent manager case.

When a manager is incompetent, the quality becomes important and the decomposition of audit process and reporting decision is useful. If audit quality is high in both audit process and reporting decision, the incompetence is more likely to be detected and reported. However, if one of the two processes has a low quality, the incompetence may not be reported.

All auditors are not similar. If the auditor is truthful, high ability is sufficient to deliver the high audit quality. High ability itself is not sufficient for quality of audit from an opportunistic auditor; they may use the evidence on managerial incompetence gathered through a high-quality process as a bargaining chip to gain leverage in making the reporting decision. Mandated rotation of auditors may help mitigate this possibility.

Various Perspectives on Audit Quality

Meaning of high-quality audit varies, depending on the party whose interest and point of view are considered relevant to the discussion. It also depends on the context. It is useful to examine these variations so the term of audit quality can be appropriately qualified for the sake of clear communication among the interested parties.

Consider four major classes of agents in a public company: (1) current and potential shareholders (without managerial roles), (2) (government) regulators, (3) external auditors, and (4) senior manager and the board. Shareholders' primary interest in audit arises from potential value of financial reports in providing information on the quality of managers' service of productive stewardship of resources entrusted to them. They expect the financial report with high audit quality to have a close correspondence between the reports and a company's relevant events, transactions, and state of the world. That is, from shareholders' point of view, audit quality is high if this correspondence is sufficiently higher than it would be in absence of audit while generating the positive net value for a given cost of audit. To the extent audit helps prepare more accurate financial reports by more objectively representing the relevant events and status of the company in a timely fashion (so its value exceeds the cost), it serves the interests of investors who regard it as being of high quality.

In many jurisdictions, including South Korea and the U.S., governments mandate external audit by “independent” professionals as a requirement for publicly traded companies. The regulators view the quality of audits in terms of (1) conformity to the audit procedures laid down under the prescribed audit standards, and (2) the absence of ex post audit failures and resultant scandals, especially when the financial reports are revealed to diverge significantly from the facts after the reports have been certified by the auditors. If the prescribed audit procedures are followed, and there are no public scandals, regulators feel they have done their job by writing audit rules and pushing auditors to comply with them, in the hope that failures do not occur too often raising public controversies and legislative pressures.

Theoretically, the regulators’ actions are supposed to incorporate the interests of all of the agents in the company. However, they often act to protect interests of the investors (i.e., shareholders without managerial roles) as the focus of their attention. This regulatory preference may enhance the investors’ welfare in short run. However, emphasis on compliance with the regulations may also have unintended long-run consequence of increasing unnecessary costs. Placing too many restrictions on the company’s accounting and disclosure choices can also tie the hands of competent and well-intentioned managers to keep their investors informed.

From the point of view of external auditors, a high-quality audit yields many chargeable hours of work yielding higher fees and profit margins without exposing them to the risk of public disclosure of discrepancies between audited financial reports and the facts of the case, and the concomitant liabilities. Much of the literature on audit risk concerns various elements of the risk to which the auditors are exposed. For instance, the auditing standard explains that audit risk is determined by a firm's inherent risk, control risk and detection risk. These include failure of an audit to detect and report a material error or manipulation in financial statements to the extent the audit process complies with the regulatory standards. Auditors' primary concern is compliance with the procedural rules because they can be held liable for non-compliance in case material undetected errors come to light. Note that unlike investors' expectation toward quality audits, an auditor's concern with quality is more procedural than substantive.

Company managers occupy its procedural and operational hub, dealing directly with the shareholders, regulators, and auditors (Sunder 1997 Chap. 2-3). They have direct control of its operational decisions, the accounting and financial reporting system, and inputs into the system. They possess discretionary power to alter errors, accuracy, representations, and disclosures in financial reports. In this sense, the managers are the primary object of scrutiny in an external audit. Competent managers with honest motivations and intent view audit quality in terms of high-probability discovery of errors while maintaining an efficient audit process to keep the cost of audit low. But that is only one side of the coin. All parties are aware that, given the agency problem in the firm, shareholders use financial reports, howsoever imperfectly, to assess the performance of managers, and make their compensation and retention decisions. This important use of financial reports induces managers to opportunistically present themselves in more favorable light whenever possible.

External auditors are hired when the shareholders find the cost of audit to be worth its positive effect on the informativeness of the financial reports. However, note that managers are the party who is in day-to-day contact with the auditors and to influence their work through granting access to records and coordination of work. The abovementioned relationships create complex and mixed motives towards audit quality from a manager's perspective. First, a manager would want an efficient contract with auditors so they can complete their scrutiny at minimal cost to the company. Second, a competent manager with good intent would want the auditor to help identify and mitigate as many errors and omissions as possible so the financial report is more informative. Third, managers own motives to appear to have done a good job for shareholders would discourage the auditor from catching any manipulations or shortcuts by the manager. In the worst cases, an incompetent manager may lose the job if audited well. Yet, managers have significant, albeit not complete, control over hiring and supervision of auditors.

Many approaches have been attempted to address this "fox guarding the henhouse" problem in manager-auditor relationship. In Canada and the U.S. as well as Korea, public companies are required to have non-management members of the board of directors of the company constitute their audit committees who are supposed to handle all interactions with the auditors, including hiring, firing, supervision, and communication. This well-meaning solution looks better on paper than it works in practice, because auditors depend on the cooperation with the managers who control most information, the access to the accounting system, and the facilities where auditors do their work. Second, field studies (Fiolleau et al. 2013; Esplin et al. 2018) reveal that in many case the hired managers remain in effective charge of auditor relations, with the audit committee playing a supporting, sometimes mere superficial, role for the sake of compliance with the regulations. Finally, most so-called "independent" directors are hardly independent if their election and reappointment to the board of a directors—a juicy plum in many cases—is under the control of the top management of the firm.

Another attempt to address this problem takes the form of mandate for auditor rotation. This may require firms to change their audit firms or audit partners after a specified period of time. A firm may or may not have the freedom to choose its own auditor in open market for audit services. For example, in South Korea, a periodic auditor designation system has been in place since 2020. The designation system applies to the listed companies and the larger unlisted owner-managed companies. Under this system, Securities and Futures Committee (government regulator, hereafter referred to as SFC) initially designates an audit firm to audit each company for three years. At the end of the three-year term, the company is free to choose an auditor from an approved list of qualified audit firms for the next six years. At the end of the six-years, the SFC designates another auditor for the next three years, and so on. This auditor rotation system combines elements of market choice and regulated designation of auditors and is differentiated from varied practices elsewhere in several respects: (1) the rotation is at the audit firm, not partner level; (2) the auditor is designated by a regulator by matching the company and the audit firm by class (based on size), and the company has little say in this matter. The latter condition enhances the auditor independence to a great extent because it raises an auditor's bargaining power in negotiating the audit fee, the audit process, as well as the reporting decisions. Indeed, audit fees have risen noticeably since this system of rotation was implemented (Kim and Yoo, 2022).

The new auditors are assigned two months prior to the beginning of the first business year for which they will audit the company. The incumbent audit firm is excluded from this designation process. The new system was introduced for only 220 larger companies in 2020 so as to bring all eligible companies to the new system in staggered steps. Once an audit firm is designated as a firm's auditor, the company and the auditor are given two weeks to enter a contract.

The matching between an auditor and a firm is done based on the groups of auditors and firms based on size. The audit firms are classified into four groups based on the number of CPAs, their revenue, and some other criteria. The companies are classified into four groups by asset size. Companies in each group are matched with an auditor in the group of corresponding group. For instance, the first group of auditors consists of big four auditors. To belong to the first group, the following three conditions should be satisfied: (1) more than 500 CPAs, (2) more than $75 million in audit liability coverage, (3) more than 140% of the minimum required number of CPAs in the quality control department (e.g., more than 14 CPAs), and (5) more than 100 listed companies in the current client list.

SFC designates an audit firm in the group of auditors from the higher or the same group of firms. A firm can appeal to SFC to reassign an auditor and then a new auditor can be assigned when several conditions are met. Some of the conditions are as follows: (1) A firm is a foreign investment company and an audit firm is specified by the foreign investor. (2) There exists a potential auditor independence issue. (3) A company requests a change in assigned audit firm, either from its own or a different group. (4) A parent company and a subsidiary have designated auditors and they want to have the same audit firm.

According to the matching rule, larger audit firms have a greater chance to be designated to audit larger companies. Therefore, audit firms have focuses on hiring more CPAs while not enhancing the audit quality based on the capacity of quality control department. To mitigate this problem, SFC set the conditions for quality control (requiring more than 14 CPAs in the quality control department) and the capacity to cover more than $75 million in auditor liability.

Under mandatory rotation, an auditor's work is subject to scrutiny by the successor firm. The successor has the motivation to be diligent in finding any errors in the predecessor's work in order to avoid being held responsible for them later when they might be discovered. Anticipating this motivation of the successor, the incumbent auditor is also motivated to be more diligent and conservative, especially during the final year of the engagement. Empirical support for this phenomenon is reported in Kim et al. (2022) who found that auditors suggest more adjustments to clients' financial reports in the final year of engagement preceding the adoption of mandatory rotation in Korea.

However, this is not an unmixed blessing of auditor rotation. Note that conservative auditing and reporting is not equivalent to high-quality audit or report. Hidden earnings or asset values also induce mispricing of companies and their securities relative to their fundamental value, and thus induce poor investment decisions by investors. Consistency of audit quality over time is also important for investors' trust. To the extent interaction between the incumbent and the successor auditor outlines in the preceding paragraph may impart fluctuating degree of conservatism in the time series generated under the system of auditor rotation, consistency of audit quality may get weak and the financial reports may become less comparable

Equilibrium Audit Quality Level

The different parties (i.e., a manager, shareholders, and an auditor) require differential levels of audit quality based on their preference. A competent manager would want to choose the quality level which can perfectly reveal his performance. An incompetent manager would want to choose the quality level which can hide his true performance and ability. An auditor would focus on the reputation in the market and the potential liability caused by audit failure. The regulator should incorporate these differential views on the audit quality.

(1) The targeted audit quality can be differential depending on the purpose of audit and the kind of organizations. For instance, the audit for initial public offering should be more precise than periodic audit for other purposes. On the other hand, firms with small number of interested parties may require the lower audit quality.

(2) The audit quality depends on the governance structure of the firm being audited. Since a primary driver of mandates for independent audit is the attempt to address the moral hazard associated with the agency relationship between shareholders and professional managers of larger publicly traded firms, we should expect that in situations where the threat of moral hazard and the associated risk of manipulated financial reports is weaker, less resources would be spent on independent auditing. Abudy et al. (2023) examined audits of family firms in Israel and reported some evidence to support this proposition.

(3) The audit quality is not observable ex ante. Unless an audit failure or other scandal occurs ex post, parties other than the auditor cannot know the actual quality. Members of management who work directly with the audit staff, members of the audit committee of the board of directors and the regulators who scrutinize audit compliance with standards may have some information about the quality, although the information also is necessarily imperfect.

3. Auditor Independence

The primary rationale for hiring external auditors in organizations lies in protecting investors and other participants from error and omissions in the financial reports prepared by managers. Therefore, independence of auditors from managers is important for quality and reliability of audited financial reports. Since managers have incentives to inflate the financial reports to make their own performance look better, auditors are expected to approach their task with a dose of skepticism of the accounts and reports, so they have good chance to identify errors, especially opportunistic manipulations by managers. It is generally believed that independence of auditors enhances their capacity to perform this task satisfactorily.

Before proceeding further, it may be worthwhile to dwell on the meaning(s) of independence in audit context. As a first approximation, one may regard an auditor to be independent under one or more of the following conditions:

(1) Auditor has the professional expertise and training to maintain conditions under which he/she can freely exercise best judgment in pursuit of auditing duties to detect errors, omissions and manipulations.

(2) Auditor has no known or undisclosed personal or financial obligations, relationship or entanglements (other than engagement as the external auditor[3]) with either the firm or members of its management and the board of directors to the extent that they might have any influence on auditor's choices.

(3) Auditor's process and reporting choices are based on evidence gathered and judgments appropriate under the prevailing situation, and not influenced by (a) preferences of managers and the board of directors, (b) monetary or professional consequences (for the auditors) of the choices made.

Out of the three conditions, it is very difficult to attain the second condition because of the current hiring process of external auditors: auditors are hired by a client company which is the object for

[3] In this paper we do not deal with the thorny issue of independence of auditor from the client under the current system where the former's livelihood depends on decisions made by the latter. It has been argued that independence of auditors is impossible under these circumstances. Indeed, the draft bill of the 1932-33 securities laws before the U.S. Senate proposed that publicly traded companies be audited by Government Accounting Office (GAO). That provision did not survive in the law after lobbying by the American Institute of Accountants, and little has changed in the intervening nine decades.

audit. According to regulation, audit committee instead of management is supposed to hire the auditor but the process is easily influenced by the management and also the appointment of audit committee members are not free from the management's influence. Therefore, the fact that the auditor audits the client company which pays for the auditing makes more difficult for auditors to keep their independence.

That is, there are practical difficulties in attaining independence, both in fact and in appearance. Given the sizes of firms they must audit, each jurisdiction has to have at least several large audit firms with enough human and technological resources to complete the audit of the biggest of their client firms within a reasonable amount of time. On one hand, large size of audit firms reduces their reliance on revenues from any single client, and thus rendering their independence to be less susceptible to managerial pressure. On the other hand, a large audit firm is likely to have other clients whose business interests have conflicts with one another. In such cases, the client firms may not trust the auditors to keep their information confidential. Larger the audit firm, lower is it dependence on revenues from client of a given size. Thus, an audit industry consisting of larger firms can be expected to be more independent. However, as the size of audit firms increases, the total number of competing audit firm in an economy must decline, reducing competition.

When audit firms provide non-audit services such as consulting and taxation, they also gain more information and deeper understanding of the client's business, which can be valuable to the auditors to direct their own efforts to find errors and omissions. However, this information advantage is attained only at the expense of extra-audit entanglements and revenues from the client with their attendant risk of influencing judgments with potential to lower audit quality. All these factors, when considered together, render the ideal degree of auditor independence a matter of judgment in itself, and not a black-and-white issue which can be addressed in absolute terms.

4. Audit Efficiency

Audit efficiency can be defined as the amount of audit resource spent to achieve a certain level of audit quality. The examples of audit resource are the number of CPAs, their working hours to audit a firm, investment cost in new audit techniques and so on. The expected amount of audit resource would depend on an industry, risk profile of a client company, and a target audit quality. For instance, if a company has high audit risk, an auditor should spend more resource to achieve the required level of audit quality. Also, if a target audit quality required by interested parties is high, the auditor should devote more resource on audit planning and process.

The audit efficiency affects both an audit fee pricing and an audit firm's profit. When the audit fee is fixed, the high (low) audit efficiency increases (decreases) an audit firm's profit. Therefore, an auditor has an incentive to enhance profit by improving the audit efficiency. On the other hand, when the audit fee is determined at a negotiation between a company and an audit firm, the auditor's effort depends on distribution of bargaining power between the audit firm and a company. If a company has a high bargaining power, an audit fee may not guarantee enough profit for the auditor and the auditor will make efforts to enhance the audit efficiency. However, if the auditor has high bargaining power, the auditor's inefficiency in the audit process can be covered by the high audit fee but the auditor would have less incentive to improve the audit efficiency. For instance, under Korea's designated mandatory rotation system, the auditor's bargaining power is very high because the auditor is designated to a company. In the case, the auditor may have less incentive to improve audit efficiency because the inefficiency can be passed on to the client in the form of high audit fee. On the other hand, if severe competition pushes audit fees too low, the auditor may lose incentives to invest in improved audit technology, and resort to lowering audit quality instead.

The target quality is also important in determining the audit efficiency. The sum of audit resource and audit fee is cost to society; regulators should be prudent in choosing the mandated level of audit quality because higher audit quality may decrease the chance or errors but does not guarantee higher social welfare. Lower audit quality saves the cost but risks scandals and consequent social harm. Therefore, we need to differentiate the target quality for each context. If an IPO is estimated to have greater consequences from audit failure, it deserves higher quality audit. Also, listed companies, with their generally higher number of stakeholders, may deserve higher audit quality than unlisted companies. By having the differential level of audit quality, an audit firm can coordinate its resource and manage risk for the audit firm. Also, regulators can target aggregate risk level based on the differential required audit risk for various situations.

Audit functions can be performed by either public organizations or private organizations. Indeed, the draft bill of the 1932-33 securities laws before the U.S. Senate proposed that publicly traded companies be audited by Government Accounting Office (GAO), which is part of government. Conventional assumption is that private organization has higher efficiency than public organizations. However, this may not be true in the audit market. Private organization has its own incentive so that it tries to reduce resources spending, thereby increasing audit efficiency in a narrowly defined sense. However, too much reduction of audit resource can also lower the unobservable audit quality. On the other hand, public organizations are less sensitive to resource spending than private organizations. Therefore, public organizations may be able to maintain their resource spending and stable audit quality without creating concerns for auditor independence.

5. Regulation and Signaling

Under the Korea's periodic auditor designation system, SFC does not consider company's preference in making its decision. It has been suggested that when a company chooses an auditor with reputation for higher quality, investors raise their estimates of company's value if such (costly) auditor choice is perceived by investors as a signal of conservative financial reports and managerial confidence in better prospects for the firm (Titman and Trueman, 1986). However, under the mandatory rotation system in Korea, companies do not choose their auditors, and therefore companies with better prospects cannot distinguish themselves from others by choosing the costly signal of picking a high quality auditor. More generally, well-intentioned regulatory requirements tend to enforce greater uniformity, but only at the cost of depriving companies of the opportunity to engage in signaling, thus diminish the quality of information available to investors through the market for audit services.

Under the periodic auditor designation system, a client company may petition the SFC for a change of their assigned auditor and therefore it may be possible for stronger companies to distinguish themselves from others by asking for a larger (presumably more reputable) audit firm when a less reputable audit firm has been assigned to them. This appeal may be a very strong signal of revealing the firm's financial strength to the market. At the same time, a firm which asks for the change of an auditor from a reputable one to a mediocre one will generate another strong signal which reveals that it is a financially weak firm. Therefore, the rotation system (in Korea) can generate some exceptionally strong signals from unintended mismatch between auditors and firms in the matching process.

However, unless the quality of audit is clearly discernible to the regulator on the basis of some easy-to-measure and hard-to-manipulate variable (such as the number of CPAs), regulator may find it difficult to distinguish appeals motivated by quality signaling from opinion shopping for a more pliant auditor. The appeal system would have the potential to increase the bargaining power of companies in negotiating the audit fees.

6. Competition

The conventional wisdom is that competition enhances quality of products and lowers prices, thus promoting consumer welfare. Following this theoretical argument from product markets, greater competition among auditors has often been proposed as an instrument to improve audit quality. Yet, intensified competition in the market for audit services seems to have been followed by many audit failures and claims of lowered audit quality than before.

An important feature of audit is that its quality (from the point of view of outside investors as discussed earlier) is not observable to the investors who are the real "customers" of the audit services. This differs from most product markets, such as coffee, clothes, or cars whose quality is discernible to the customers, and this knowledge helps them make their buying decisions. The actual audit quality is rarely observed until after an audit failure occurs. Since audit failures are relatively rare, less than 1 percent of all audits of publicly traded companies in the U.S., audit quality is essentially unobservable to customers of the audit. Corporate managers may have a better assessment of the quality of audit since they can observe it through their direct interaction with auditors during the audit process. But the incentives of hired managers to ensure high quality of audit depend on the quality and intent of the managers themselves. If the managers are competent and want to have the financial reports be free of any errors and omissions, external audit is hardly needed. If the managers are incompetent, or are opportunistically trying to hide things from investors, they cannot be relied upon to promote quality of audit and report any shortcomings in it. This situation of "difficult-to-observe-quality" renders audit markets a good case of what Akerlof (1970) labeled a "market for lemons" where unobservability of product quality leads to collapse of both quality and price under pressure of competition.

If the competition in audit market is too intense, audit firms decrease the audit fee to earn audit engagements, hoping that the lower quality would go undetected due to unobservability. The decreased audit fee pushes the auditor to reduce their resource input, mostly time spent, for auditing, thereby lowering the chance of detecting any errors, omissions, violations, and manipulations. If their effort and the audit quality were observable, they could not reduce their effort and therefore be reluctant to lower the audit fee. However, under the unobservable audit quality, their effort and quality tend to be compromised by the lower audit fee.

Also, the opportunity to earn revenue from consulting/advisory services as well as renewal of audit engagement may discourage an auditor from reporting observations unwelcome to managers, such as managerial defalcations. Tough negotiations with the client on reporting issues always carry the risk that the client may seek to change the auditor. If the quality of audit (i.e., reporting decision) were observable, this phenomenon is less likely to occur.

On the other hand, insufficient competition among audit firms may also generate reports of lower audit quality. Without pressure of competition, auditor may deploy resources inefficiently, and bill the client with higher fees. The auditor may also fail to invest in improved information and analytical technologies for doing the audit.

Competition in the audit market is suggested as an alternative to enhance audit quality but precisely speaking, competition is more relevant to audit pricing as explained above. Competition among audit firms may lower the audit fee for a company, however, we cannot observe whether they spend the required amount of resource to maintain the certain level of audit quality. Therefore, unlike product market with observable quality, where competition enhances product quality, market competition can lower the unobservable audit quality although it can still lower the audit fee. In sum, note that this unobservable quality problem arises in three ways: (1) the audit quality cannot be observed unless audit failure occurs and it is assumed as good quality of audit if the failure does not occur (2) the actual resource spending and effort are not easy to observe from a company and outside parties (3) there is a common moral hazard problem between an audit firm and an auditor so that even an audit firm cannot control an individual auditor's effort. This is the reason why quality assurance within an audit firm is important and a regulator should pay attention to an individual auditor as well as an audit firm when designing a system for preventive actions and penalty for audit failure.

Korea's auditor designation system lowered the degree of competition among audit firms because more than fifty percent of listed companies have audit firms designated by SFC as of 2022. Under this designation system, the audit firms do not compete against each other for the firms under rotation because a certain amount of audit revenue is guaranteed by the system. It has increased audit firms' bargaining power in the audit-fee negotiations with client firms, generating more audit hours and fees. This lower competition also discourages the audit firms from making investments in developing their audit technologies to improve quality.

Under Korea's auditor designation system, once the steady state is reached, some firms will finish six years of free market audit choice and will have their auditor designated by the SFC. Therefore, the ratio of firms under mandatory rotation to firms in the free audit market keeps changing over time. Proponents of the designation system may argue that the designation should be applied to all of firms in the market. However, this may not be the case in terms of creating the auditor's incentive to improve audit quality. If auditors are designated to all of firms, auditors would not have strong incentive to improve audit quality because audit revenues are guaranteed even without effort to differentiate itself from other audit firms by higher audit quality. On the other hand, if some companies hire their auditors in in the free audit market, the latter would have incentives to invest in audit technologies and building their reputation for high audit quality so they can earn more revenues in the open market for audit services. Therefore, a balanced composite of assigned and open market hiring of auditors can help promote better audit quality.

Conventional wisdom is that mandatory rotation lowers market competition and thereby raise prices and lower quality, at least in the short run. However, in the long-run, as long as the ratio of firms under mandatory rotation to firms in the free audit market is not so large as in Korea's audit market, market competition may be higher if mandatory rotation opens the opportunity for non-big four firms to audit larger companies which were beyond their reach in absent of rotation. Opportunity to audit larges companies allows the non-big four firms to acquire experience and to build reputation. Emergence of non-big four firms in the audit market for larger companies can increase competition and raise the general audit quality in the market.

7. Concluding Remarks

Five aspects of audit we have discussed above are of fundamental importance. While all five stand in complex interrelationships, we can place them in two broad categories of attributes (on which auditors have significant control) and environment (consisting of factors on which others have significant control). Three concepts—audit quality, independence and efficiency—arise directly and largely from the attributes, relationships, incentives, training, and technology auditors bring to work, and therefore have considerable albeit not total control on them. Of the other two features, informativeness of the system enabled by opportunities for signaling is largely controlled by the regulation of financial reporting system through setting of financial reporting standards, and freedom for companies to choose their accounting methods and degrees of disclosure. The degree of competition in the market for audit services (as well as in the labor market for accountants) is also a regulatory determination under control of various government units and professional societies in various jurisdictions. This set of five concepts is a useful basis for comparison, design, and evaluation of audit regimes across economies and jurisdictions (of which we use South Korea and U.S. as two examples).

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