What Determines Audit Independence and Expertise in Russia? Firm-Level Evidence

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Abstract: Using a unique dataset of joint-stock companies, we explore the corporate audit system in transition Russia. In comparison with companies in Western and Asian Pacific states, Russian firms have a weaker audit system in terms of the independence and expertise of the audit committee and the external auditor. Board composition, foreign investment, and affiliation with a business group are highly important factors determining audit committee composition and audit firm choice as well as a combination of the two auditing bodies. However, each of these factors has a clearly distinct impact. Moreover, empirical evidence suggests that government ownership, company size, fund procurement activities, and overseas advancement significantly affect audit independence and expertise in Russia.

Key words: audit independence and expertise, board composition, business integration, foreign investment, Russia

1. INTRODUCTION

In the achievement of sound company management, the role of auditing cannot be overemphasized. In fact, it has been repeatedly verified that high-quality independent auditing mitigates agency conflict between owners and managers through the enhancement of management discipline.[1] If thorough corporate auditing is highly valued even in the developed market economies of the United States and Western Europe, the significance of well-performing audit systems is certain to increase from the viewpoint of ensuring the transparency of corporate management and the rights of shareholders in countries where security markets are undeveloped and the concentration of property rights is noteworthy (Méndez & García, 2007).

Transition economies, such as those in Russia and Central and Eastern Europe, are not exceptions. In these economies, although 20 or more years have passed since the breakdown of the Communist Bloc, their security markets and banking systems are still taking shape, and, consequently, the market for corporate control and financial institutions have limited potential influence on managerial discipline of domestic companies. Under such circumstances, there is a growing tendency in the transition economies to give more attention to the role of corporate auditing. In fact, the Russian federal government recognizes that the establishment of an effective audit system is one of the critical policy issues that will make a great contribution to improving corporate governance in Russian firms; hence, investigation into the actual state of corporate activities in this field is strongly desirable for policy makers (National Council on Corporate Governance, 2010). However, to the best of our knowledge, there have been no firm-level empirical studies of this subject, although some studies have addressed corporate auditing in Russia (Sweetman, 1999; Sucher & Bychkova, 2001; McGee & Preobragenskaya, 2005; Samsonova, 2007; 2009). To fill this void, in this paper, we empirically analyze the firm-level determinants of audit independence and expertise in Russia.

Besides the novelty of research, we make contributions to the auditing literature in the following manner: First, emerging markets with notably different political and economic circumstances from those of developed economies provide valuable research opportunities to redefine the significance and role of corporate

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[1] For instance, see Watts & Zimmerman (1983), Francis & Wilson (1988), Craswell et al. (1995), Fan & Wong (2005), and Abbott et al. (2010). In addition, Fields et al. (2001) and Turley & Zaman (2004) provide an excellent overview of this research area.

auditing (Lin & Liu, 2009).[2] Moreover, studies of Russia and other former socialist transitional countries, in which government regulations on corporate governance are relatively moderate in comparison to those in developed economies and, accordingly, firms have a wide range of discretionary powers over their audit systems, are very useful for discovering the firm-level determinants of audit activities. In this paper, we examine the manner in which political and economic forces and incentives emerging in a transition economy with significantly different settings from those in advanced states influence corporate auditing.

Furthermore, with Russia as a target country, we study the factors affecting audit independence and expertise in greatly different legal settings from the U.S. and European common law countries on which the vast majority of empirical literature focuses. In Russia, the joint-stock company is the most accepted legal form of incorporation among middle-sized and large companies (Iwasaki, 2007a). According to the law, Russian joint-stock companies should establish an audit committee (*revizionnaya komissiya* in Russian) as the statutory company body of corporate auditors. Unlike in the U.S. and many other European countries, however, the Russian audit committee is not a board subcommittee comprised of members of the board of directors. In addition, Russian law prohibits board directors to concurrently hold a post in their company's audit committee. In this sense, the audit committee in Russian firms is rather closely related to the board of corporate auditors in Japan and the board of statutory auditors in Italy. Therefore, we attempt to develop and empirically verify a testable hypothesis regarding the determinants of audit independence and expertise, taking the above unique legal conditions into account along with specific political and economic factors in transition Russia.

In addition, in contrast to preceding studies, we examine both the audit committee and the external auditor (audit firm) in combination to provide a comprehensive assessment of the audit system in Russian corporations. Here, we deal with not only audit committee composition and audit firm choice individually but also the possible combination of these auditing bodies. To this end, using a multinomial Logit model, we propose a new empirical methodology in order to examine the determinants of comprehensive choice of the audit system by Russian firms.

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[2] In addition, see Ball et al. (2000) and Wang et al. (2008) for their presentations on the importance of the comparative study of corporate accounting in different institutional settings.

To achieve these goals, we conduct an empirical analysis based on a unique dataset of joint-stock companies obtained from a nation-wide enterprise survey in 2005. The main focus of our empirical analysis is as follows: As discussed later, a general shareholder meeting in a Russian joint-stock company has the exclusive right to appoint auditors. Under certain conditions, however, the board of directors is allowed to propose auditor candidates at its discretion to a general shareholder meeting. Moreover, the board of directors is granted the right of pre-negotiation with external auditor candidates (accountants or audit firms). Therefore, it is presumed that the board of directors has the right to select and propose external auditors to a general shareholder meeting. In earlier research (Iwasaki, 2008; 2009), we examined the determinants of the composition of the board of directors and found the power balance in a general shareholder meeting of a company, or, in other words, the company ownership structure, is clearly reflected in the composition of the corporate board. In such a case, any proposal by the board of directors for the selection of a corporate auditor or an external auditor is highly likely to be adopted as a resolution at a general shareholder meeting without any difficulty. If this statement is true, the composition of the board of directors will be clearly evident as a highly important element in the corporate audit system in Russia. Thus, testing this hypothesis is a focal point of the empirical analysis in this paper.

Along with the board of directors, specific shareholders may also have a substantial influence on the audit system of the companies in which they invested. As stressed in preceding studies (Citoron & Manalis, 2001; Wang et al., 2008), also in Russia, large shareholders, foreign investors, and the government are noteworthy outsider owners who may strongly demand transparency of their company financial activities as well as reliability of the accounting statements. In addition, business groups that emerged as a result of intensive business integrations across the federation in recent years are also considered to play an important role in the corporate governance of affiliated firms in Russia (Iwasaki, 2007b). Estimating the influence of these four types of shareholders on the audit system is also an important issue in the empirical analysis in this paper.

Furthermore, the audit system of a Russian joint-stock company can be affected by other factors, including organizational structure and business activities of the company as well as the development and market structure of the domestic audit industry. As noted later, many studies of developed economies have demonstrated that a series of factors, including company size, business diversification, internationalization, reliance on market financing, and the use of

bank credits, significantly influences the audit system and its activities. In our empirical analysis, the impact of these potential determinants will also be examined to assess whether or not the empirical findings from developed economies are applicable to Russia.

The results of our study strongly suggest that, when compared to companies operating in Western and Asian Pacific states, Russian firms compose a questionable audit system in terms of the independence and expertise of the audit committee and the external auditor. Our empirical analysis suggests that the board composition, foreign investment, and affiliation with a business group through stock ownership are highly important factors determining the audit committee composition and the audit firm choice as well as a combination of the two auditing bodies. At the same time, however, it is also apparent that the scope of the impact of these three factors differed greatly. In addition, we found that government ownership, company size, fund procurement activities, and business internationalization have significant impacts on the audit system of Russian firms. To sum up this empirical evidence, we have seen that audit independence and expertise in Russia are greatly affected by the political and economic factors characterizing a country's transition economy (e.g., the role of the federal government and emergence of business groups) as well as the elements, the statistically significant effect of which previous studies of developed economies have repeatedly verified (e.g., board composition and foreign investment).

The remainder of this paper is organized as follows. Section 2 examines the legal framework and market environment of the corporate audit in Russia. Section 3 describes the data used in this study and overviews the actual state of the audit system in joint-stock companies. Section 4 presents the testable hypotheses regarding the determinants of audit independence and expertise in the context of a Russian transition economy, and Section 5 conducts empirical analysis. Section 6 summarizes the major findings and concludes the paper.

2. LEGAL FRAMEWORK AND MARKET ENVIRONMENT OF THE CORPORATE AUDIT IN RUSSIA

In Russia, the foundation of the legal framework for the corporate audit of joint-stock companies is made up of the Civil Code, the Federal Law on Joint-Stock Companies (Law on JSCs), and the Corporate Governance Code (CG Code).[3] The Civil Code and the Law on JSCs do not make companies with board

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[3] These provisions refer to Part I, Chapter 4 (Art. 96 to 104) of the Civil Code of November 30, 1994, the Federal Law on Joint-Stock Companies of December 26, 1995, and the Resolution of the Federal Commission for the Securities Market dated April 4, 2002, regarding the recommendation of the adoption of the Corporate

committees, such as those established in the U.S. and many European countries. Rather, as reported in the Introduction, the Russian corporate law adopts an institutional design in which an audit committee is established under the general shareholder meeting as a statutory company body of corporate auditors.

Regardless of their form of incorporation, company size, and public stock offering, all joint-stock companies in Russia are required to establish an audit committee. The number of members composing the audit committee is not regulated by law. The appointment of auditors is an exclusive right exercised at the general shareholder meeting, and it is an ordinary resolution matter that cannot be delegated to the board of directors or an executive body. Although there is no special provision concerning outsider auditors, the independence of the audit committee in terms of personnel composition within the company is secured by prohibiting auditors from concurrently holding the position in the board of directors or other executive organs. Moreover, the Law on JSCs of Russia simultaneously prohibits directors and other executive officers from exercising their voting rights when electing audit committee members.

A shareholder who possesses 2% or more voting shares has the right to propose auditor candidates at a general shareholder meeting. Meanwhile, when no shareholder proposes auditor candidates or the number of auditor candidates necessary for the resolution of the general shareholder meeting cannot be ensured, the Law on JSCs allows the board of directors to propose auditor candidates selected at their discretion to a general shareholder meeting.

Following developed countries, also in Russia, the external auditor and the audit committee are regarded as the two mainstays of corporate audit (Bulgakova, 2005; Iwasaki, 2007a).[4] In accordance with the provisions of the Civil Code and

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Governance Code. The description of this section reflects the contents of the laws and regulations that were in effect in Russia during the period of the joint enterprise survey that was the basis of the empirical analysis.

[4] Now, in Russia, leading listed firms classified into the A-class quotation list are required to prepare financial statements in strict compliance with International Financial Reporting Standards and submit them to the securities authority. In addition, all other listed firms and specific unlisted firms that meet certain conditions are required to prepare statutory financial statements based on the domestic accounting rules. The financial statements of Russian corporations, not only those of the listed firms but also those of many unlisted firms, are broadly available through the Internet, commercial databases, or other sources, and investors as well as counterpart companies make extensive use of these disclosed statements for making business decisions. As a consequence, the accountability of external audits that endorse the reliability of these financial statements has been thoroughly examined. In fact, it has often been reported that the prosecutor's office or shareholders have indicted certified public accountants or audit firms for their involvement in

Audit Activity Law,[5] a legal external audit by a certified public accountant or an audit firm is mandated to an open joint-stock company[6] in which stocks are freely transferable to third parties and open to public stock offerings as well as to a company in which annual sales are 500,000 times or more than the official minimum wage or the asset balance at the end of the term on the balance sheet exceeds the wages by 200,000 times or more. Generally, the vast majority of middle-sized and large enterprises in the industrial and communications sectors are in this category. The firms we surveyed were no exception.

The Law on JSCs stipulates that the external auditor is approved (not "selected") at the general shareholder meeting and the compensation for this duty is determined by the board of directors. Although the Law on JSCs does not clearly specify who has the right of submitting a proposal for the selection of an external auditor to the general shareholder meeting, it is obvious from this provision that the board of directors is delegated the right of pre-negotiation with nominee external auditors for the sake of its company. Therefore, it is presumed that the board of directors has such power.[7]

The selection of an external auditor is greatly affected by the development and structure of the audit industry as the supply side. Interaudit, which was established in 1987 on the basis of the resolution of the Cabinet of Ministers of the USSR, was the first audit firm in modern Russian history and a sort of national policy corporation solely engaged in the mandated audit of foreign joint venture companies (McGee & Preobragenskaya, 2005). Since then, amid ongoing drastic market-oriented economic reform and the denationalization of business activities triggered by the end of the socialist system, the needs of external audits

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misrepresentations or false statements about the financial results of their clients (For relatively recent cases, see the articles dated April 1, 2010, and October 21, 2010, in the Russian daily newspaper "Kommersant," among others). In a court case over audit reporting on the major petroleum company Yukos, its audit firm, PricewaterhouseCoopers, was convicted and fined 16.8 million rubles in March 2007. This has been recognized as a symbolic episode (Anon., 2007).

[5] The Federal Law on Audit Activity of August 7, 2001.

[6] According to the Civil Code and the Law on JSCs, an individual who intends to set up a joint-stock company in the territory of Russia must choose as a legal form of incorporation either an open joint-stock company or a closed joint-stock company in which a preferential acquisition right for the transferred stocks is granted to other shareholders and the company (Civil Code, Art. 97 and Law on JSCs, Art. 7). In terms of minimum capital, number of shareholders, and information disclosure obligation, a certain difference is established between the two types of companies. For more details on this point, see Iwasaki (2007a; 2007c).

[7] In fact, in almost all cases that we investigated, the general shareholder meeting approved the external auditor based on a proposal of the board of directors.

have also expanded dramatically. As a consequence, in 2005, the number of certified public accountants and audit firms reached approximately 30,000 and 3,000, respectively.[8] During this period, international audit firms entered Russia one after another after Ernst & Young's advance in 1989. By 2005, approximately 25 foreign audit firms opened branch offices or established subsidiaries in Russia (Bulgakova, 2005; Smirnov, 2005; Samsonova, 2009). In this way, the Russian audit industry was created in a shorter period of time than that in Western countries.

The presence of foreign-affiliated companies in the Russian audit market is prominent. Most of them are at the top of the sales ranking of audit firms, from PricewaterhouseCoopers down (Iwasaki, 2007a). Reports indicate that these foreign audit firms are performing an enlightening and educational role in the industry. They have established a reputation for their work quality and independence from clients. In particular, the strategic advantage of hiring a leading international audit firm as an external auditor is widely acknowledged among Russian investors and management executives. Meanwhile, the major clients of international audit firms are limited to the subsidiaries of multinational enterprises coming from developed economies and Russian big businesses (Sucher & Bychkova, 2001; Samsonova, 2009).

Among domestic audit firms, there are more than a dozen national major firms that have head offices in the capital of Moscow and in Saint Petersburg. They are engaged in fierce competition for customer acquisition with one another or with the indigenous small and medium-sized audit firms. However, the market evaluations of domestic audit firms are generally low irrespectively of the company size and business scale (McGee & Preobragenskaya, 2005; Guttsait, 2007). Therefore, at least in the first half of 2005, when our survey was implemented, it was hard to say that these national major audit firms had established a good reputation and were evidently superior to the indigenous small and middle-sized audit firms in terms of expertise and independence from client companies. The insufficiency of market selection and differentiation in the audit industry clearly reflect the short history of external auditing in Russia.

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[8] According to the American Institute of Certified Public Accountants (http://www.aicpa.org/) and the European Federation of Accountants (http://www.fee.be/), the number of certified accountants per one million population in the same period is about 1,100 in the United States (total 330,000 accountants and 298,000,000 population) and about 930 in the 32 European countries (total 500,000 accountants and 540,000,000 population). In contrast, the same figure in Russia with a total population of 143,000,000 in 2005 is only about 210, suggesting the underdevelopment of the audit industry in this country.

3. THE AUDIT SYSTEM OF RUSSIAN FIRMS FROM INFORMATION OBTAINED IN THE 2005 ENTERPRISE SURVEY

As reported in the previous section, the legal framework and market environment surrounding the corporate audit in Russia are very different from those in advanced countries. With this in mind, in the present section, we describe the data used for this study and review the actual state of the audit system in Russian companies.

The data in our empirical analysis are based on the results of an enterprise survey sponsored by Hitotsubashi University and the Higher School of Economics. Between February and June 2005, professional interviewers from the Yuri Levada Analytical Center (the former All-USSR Public Opinion Poll Center) spoke with 859 industrial and communications enterprises from 64 federal districts. The survey team received 822 responses from high-ranking company managers. Of these, 94.8% were company presidents, CEOs, general directors, or vice presidents. The remaining respondents were board chairmen (1.6%) or senior managers responsible for corporate governance affairs (3.6%).[9]

All firms are JSCs. The average number of workers for each surveyed firm was 1,884 (median: 465), and the total number of workers of the 822 firms was 1,549,008, which accounted for 10.3% of the total workforce in both the industrial and the communication sectors through 2004 according to official statistics (Rosstat, 2005). The sample is representative of the national population of middle-sized and large firms in its regional and sectoral composition.[10]

Of the 822 executives in the companies surveyed, 690 officers (83.9%) gave detailed answers to our questions concerning the audit committee of their companies in terms of the number of audit committee members and their basic attributes. As shown in Table 1, the audit committee of a Russian joint-stock company is composed of an average number of 3.5 corporate auditors (median: 3). According to the survey results of the preceding 22 studies on the composition of the auditing body of 5,052 companies in 25 countries around the world (Table 2), these companies set up an audit committee or a board of corporate/statutory auditors averaging 3 to 4 auditors. In this sense, Russian joint-stock companies

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[9]   The questionnaire used for the joint survey was carefully designed by the project members and experts of the Levada Center based on similar surveys conducted in the past, although it is impossible to completely avoid bias and moral hazard problems with respect to self-reporting. In addition, the fact that one of three companies that we initially contacted refused to participate in the survey may have a potential bias of initial non-response.

[10] See Dolgopyatova & Iwasaki (2006) for more details about the survey.

organize an audit committee that meets the international practices in terms of its personnel size.

The above 690 companies have appointed a total of 2,438 corporate auditors. In this paper, audit committee members selected from among rank-and-file employees, labor union members, and management staff, excluding executive officers, who are prohibited from concurrently holding a position in the audit committee, are defined as "insider auditors," and those selected from individuals other than those reported above are defined as "outsider auditors."[11] Table 1 and Figure 1 report the breakdown of the 2,438 audit committee members classified according to six attributes as well as basic statistics of their attributes. As shown in Figure 1, insider auditors account for the majority of auditors (56.0%). In addition, most of the insider auditors are selected from those who represent the interests of rank-and-file employees and the labor union. On the other hand, the most prominent group among outsider auditors is composed of representatives of private shareholders and accounts for 43.9% of outsider auditors. The expert auditors selected from specialist occupations, including lawyers, accountants, and other professionals, form the second group with a difference of 6.4%. Auditors sent from the government account for only 5.1% of all audit committee members and 11.8% of outsider auditors.

From the above results, we can ascertain that, among the companies surveyed, the means (median) of the proportion of outsider auditors and that of expert auditors to all audit committee members, which are typical indices measuring the independence and expertise of an audit committee, are 42.8% (33.0%) and 16.7% (0.0%), respectively. As described in the previous section, in Russia, the Law on JSCs prohibits corporate auditors from concurrently holding the position of board member or other company executive. It also prohibits directors and other executive officers from exercising their voting rights when electing audit committee members. Nevertheless, according to the international comparison on the proportion of outsider auditors shown in Table 2, the audit committee in Russian joint-stock companies is notably inferior not only to North American and European enterprises but also to Asian Pacific enterprises in terms of its independence. However, the matter does not end here. As illustrated in Figure 2, the remarkable feature of the audit committee of Russian joint-stock companies is the polarization of its composition due to the proportion of outsider auditors. This

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[11] Due to constraints of the methodology used in the joint survey, no distinction was made between affiliated and non-affiliated individuals with regard to outsider audit committee members. In addition, we acknowledge that there may be other unobserved connections that do not permit these individuals to be independent of the managerial and/or controlling owner power.

polarization phenomenon is also evident in the composition of the board of directors (Iwasaki, 2008) and is a distinctive characteristic of the Russian corporate governance not present in other former socialist economies.

The survey results comprise information on audit firms with which 771 surveyed companies had made a contract to implement an external audit. As described in the previous section, among nearly 3,000 audit firms operating in Russia, there is no question that the international audit firms pride themselves in having the highest reputation in terms of the quality of their auditing work and independence from clients. With regard to domestic audit firms, unlike researchers of such issues in developed countries, specialists have not reached a consensus, either currently or at the time of the survey, with regard to whether the selection of a national major audit firm clearly reflects the will of the clients to seek a better external audit.

With attention to these facts, we asked the surveyed companies the following questions about their audit firm as the second-best way to objectively measure their needs for the quality of external audits: (1) Is it an international audit firm? (2) Is it a domestic audit firm with its head office separate from the company location? (3) Is it an indigenous domestic audit firm? In our opinion and in that of Russian experts, the action of a company boldly appointing an international audit firm or a non-indigenous domestic audit firm as its external auditor could, in many cases, be regarded as the expression of its management attitude of seeking a better external audit.[12] The survey results are shown in Figure 3. Of 771 surveyed companies, 64, or 8.3% of the total, appoint an international audit firm as their external auditor, and 179, or 23.2%, enter into an external audit contract with a non-indigenous domestic audit firm. Thus, as expected, most of the surveyed companies choose an indigenous audit firm, even though such firms are reported to have problems from the viewpoint of the quality of their auditing work and independence from clients (McGee & Preobragenskaya, 2005).

Based on the discussion above, our empirical analysis relies on the aforementioned proportions of outsider auditors (*AUDCOM*) and expert auditors (*AUDEXP*) to the total members of the audit committee and an ordinal variable,

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[12] Although this is true for local companies, it is never applied to the companies operating in the capital and Saint Petersburg, where the national major audit firms are concentrated. Accordingly, if an audit firm is a domestic one, a survey that asks whether such an audit firm is a non-indigenous firm removed from the client company or an indigenous one could lead to an underestimation of the management attitude about the quality and independence of the external audit of companies in large cities. However, we believe that this will not diminish the persuasiveness of the empirical results of this study or substantially distort the implication, although it is a disadvantage of our analysis.

which takes a value of 0 for companies entrusting their external audit to an indigenous domestic audit firm, 1 for those appointing a non-indigenous domestic audit firm as their external auditor, and 2 for those making an external audit contract with an international audit firm, as the audit firm attribute variable (*AUDFIR*). For brevity, these terms are hereinafter referred to as the "audit system variables."

According to Hotelling's T^2 test, there is a statistically significant difference at the 1% level in the mean vector of the audit system variables between industrial enterprises and communications enterprises (T^2=82.199, F=27.316, p=0.000). The results of a more detailed comparison among industries are shown in Table 3. In terms of the proportion of outsider auditors and the attributes of audit firms, communications enterprises are superior to industrial enterprises at the 1% significance level. Meanwhile, no statistical difference in the proportion of expert auditors is confirmed between the two sectors. A multiple comparison of eight industrial sectors and the communications sector regarding the two variables of *AUDCOM* and *AUDFIR* rejects the null hypothesis that the mean values of these nine sectors are equal at the 1% significance level. These facts strongly suggest that it is necessary to pay attention to the differences among sectors when empirically examining the determinants of audit independence and expertise in Russia.

As the notable features of the audit system in Russian joint-stock companies, the four following points have become apparent: first, Russian firms organize their audit committees conforming to international practice in terms of the total number of corporate auditors. Second, the audit committee independence measured by the proportion of outsider auditors, however, falls well below the average of enterprises operating in foreign countries, and, among Russian enterprises, remarkable polarization takes place from this viewpoint. Third, the appointment of an international audit firm as the external auditor is very limited in Russian practice, and most companies lean toward external audit contracts with an indigenous firm. Fourth, regarding the degree of audit independence and expertise, there is a significant difference between the industrial sector and the communications sector as well as among subgroups of the industrial sector.

4. DETERMINANTS OF AUDIT INDEPENDENCE AND EXPERTISE IN TRANSITION RUSSIA: HYPOTHESIS DEVELOPMENT

Based on the motivation described in the Introduction, as potential factors greatly affecting audit independence and expertise in Russian firms, we pay special attention to (a) the composition of the board of directors; (b) large shareholding;

(c) foreign investment; (d) ownership by the government; and (e) affiliation with a business group through stock ownership. In this section, we present testable hypotheses regarding the causal relationship between these five factors and audit independence and expertise in a Russian joint stock company with the structural features revealed in the previous section. We also present other possible determinants to consider in an empirical analysis.

As reported in Section 2, in Russia, the board of directors has, by law and practice, the exclusive right to submit a proposal for the approval of an external auditor at the general shareholder meeting. However, with some conditions, the board of directors is also able to select candidates at its sole discretion and recommend them as audit committee members. In other words, the board of directors is given the authority to play a highly active role in the organization of the company's audit system. The authority of the board of directors in this function is increasingly strengthened because the top manager (CEO or company president) and other executives in a company, who are forbidden from exercising their voting rights at the general shareholder meeting, will try to influence the decision making on the audit system at the board of directors. Outsider directors are also sure to act similarly to these executive officers. Since the vast majority of outsider directors are the representatives of private shareholders and the government (Iwasaki, 2008), the board of directors becomes a main battlefield for the bargaining game between company managers and major shareholders over the shape of its own audit system (Ruiz-Barbadillo et al., 2007). Accordingly, the board composition becomes the most important internal organizational factor determining audit independence and expertise in the company.

There is persuasive logic demanding an audit system with a high degree of independence and expertise whereby the outsider board directors fulfill a stronger monitoring function than the insider directors. First, it is necessary to reduce the information asymmetry between the outsider directors and the executive officers to achieve effective management supervision (Linck et al., 2008). The realization of high-level audit independence and expertise can become an effective means to achieve this objective through a functional synergy effect with the board of directors (Adams, 1997; Beasley & Petroni, 2001). Second, the board of directors, whose important responsibilities are the evaluation and approval of management strategy, must accept a certain number of employees, who have specialized knowledge and in-house information, as board members. Hence, by improving the effectiveness of the audit committee and the external auditor, the outsider directors can achieve a balance between the necessity of management supervision and the demand for specialized knowledge and information for strategic decision making (Klein, 2002a). Third, the outsider directors have a strong motive to

attempt to maintain and improve their reputation as a stockholder agent for their own career development. The revelation of false statements in annual securities reports and other corporate disclosure information and blunders, including the correction and restatement of financial statements, will lead to a reduction in confidence. In the worst-case scenario, it is possible that they will be exposed to a shareholder lawsuit regarding negligence of their duties (Cotter & Silvester, 2003; Ruiz-Barbadillo et al., 2007). To minimize this risk, the outsider directors aim at higher audit quality to improve the possibility that auditors will detect and disclose a breach in the accounting system of their company (Beasley & Petroni, 2001). In this regard, it would be worthwhile to refer to DeAngelo (1981), who reports the following: "The probability that a given auditor will discover a breach depends on the auditor's technological capabilities, the audit procedures employed on a given audit, and the extent of sampling. The conditional probability of reporting a discovered breach is a measure of an auditor's independence from a given client. (p. 186)" Her comments suggest that both the independence and expertise of an auditor are essential elements to secure rigid auditing by complementing each other, although they have different roots. Accordingly, as Rainsbury et al. (2008), Baxter (2010), and García-Sánchez et al. (2012) affirm, we expect that, in Russia, there is a close relationship between the composition of the board of directors and the independence and expertise of the audit committee and external auditor in the following sense:

H_1: The stronger the presence of outsiders on the board of directors, the higher audit independence and expertise of the company required.

According to the agency theory, large shareholding renders supervision by the statutory organs of the company less necessary because controlling shareholders have a sufficient incentive and capability to effectively monitor and discipline the top management of their companies (Rediker & Seth, 1995). However, in the countries in which the corporate control market is underdeveloped or in a case in which the exit cost by selling stock is very significant for some reason, major shareholders possibly exert their bargaining power to enhance the monitoring function of company supervisory bodies to improve their ability to collect managerial information or strengthen their authority to dismiss management executives who fail to increase the corporate value (Whidbee, 1997). In fact, Piot (2001), on the basis of his empirical findings from France, maintains that the Anglo-American principal-agent model has little explanatory power in the concentrated ownership framework of corporate governance. It is likely that the "bargaining hypothesis" (Hermalin & Weisbach, 1998) is more appropriate in

Russia, where social distrust of company managers is particularly strong.[13]

Regarding the impact of large shareholding on audit firm choice, Rusmin et al. (2009) report a positive relationship between ownership concentration and audit quality from three Asia Pacific stock markets. Furthermore, Beasley and Salterio (2001) propose and verify their hypothesis that stockholders who increase opportunities for effectiveness of the board of directors through the inclusion of greater proportions of outsiders and through the segregation of the board chairperson and CEO positions are more likely to create boards strongly motivated in appointing audit committee members with far-reaching experience in accounting and auditing from outside. Given the high ownership concentration, dominant shareholders, who possess at least 50 percent of shares with voting rights, represent such company owners in Russia. In fact, Dolgopyatova et al. (2009) provide supporting evidence of the positive linkage between dominant shareholding and good corporate governance practices in this country. Thus, we expect that, in Russia, the dominant shareholders tend to promote audit independence and expertise in their companies:

H_2: The presence of a dominant shareholder is positively associated with audit independence and expertise of the company he or she invested in.

The next noteworthy factor in the context of a Russian transition economy is foreign investment. Since the start of the new millennium, Russia's economy has been booming, and the country has become a major emerging market. As a result, Russia is attracting considerable attention from overseas investors. However, the accumulated foreign direct investment per capita from 1989, when the Communist Bloc collapsed, to 2005 was only 459 US dollars, far short of that of Central and Eastern Europe countries that became new EU members during this period (Iwasaki & Suganuma, 2009). Domestic enterprises are closed to foreign investors, whose presence is still weak in the Russian business community. Furthermore, it is not easy for foreign investors to communicate with Russian management executives for several reasons. Consequently, many overseas investors recognize the serious information asymmetry with executive officers more than domestic investors do and deeply fear the damage to the corporate value due to the opportunistic behavior of company managers. Hence, it is natural that foreign stockholders ask their company's supervisory bodies to monitor and check the management more thoroughly than domestic shareholders do. The

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[13] In fact, our empirical evidence on the determinants of board composition strongly indicates the applicability of the bargaining hypothesis in Russia (Iwasaki, 2008; 2009).

strong demand for the preparation of financial statements conforming to the international accounting standards and high-quality auditing is a direct reflection of the above. In this respect, Sucher & Bychkova (2001) reported that, in Russia, foreign investors tend to force companies to have an external audit by a leading international audit firm. To sum up, the above arguments lead us to the following hypothesis about the impact of foreign investment on audit independence and expertise of Russian companies:

H_3: The investment by foreigners enhances audit independence and expertise of the company they own.

In the preceding studies, the positive correlation between foreign ownership and the probability of hiring international audit firms has been repeatedly verified (Citron & Manalis, 2001; Guedhami et al., 2009). It is likely that our empirical analysis of Russian firms will yield a similar result.

In Russia, we cannot overlook the role of government in corporate governance. Wang et al. (2008) report a close relationship between government ownership and the probability of hiring small indigenous audit firms in China. Guedhami et al. (2009) find, from an empirical analysis of 176 privatized companies in 32 countries, a significantly negative correlation between government ownership and the probability of hiring big four international audit firms. Meanwhile, according to an empirical study, which examined the role of state representatives on a corporate board in corporate governance, the behavioral pattern of government directors is greatly different depending on whether they have been sent by the federal government or a local one (Frye & Iwasaki, 2011). In this paper, the authors find that the presence of board directors representing the federal government significantly improves the quality of corporate governance measured as the degree of compliance with the CG Code in the company to which such directors have been sent. At the same time, representatives of regional and local governments do not appear to exert the same effect in their companies. Based on the empirical evidence presented above, we propose to test the following hypothesis:

H_4: Shareholding by the regional and local governments relaxes audit independence and expertise of the company they own, and, in contrast, that by the federal government strengthens audit independence and expertise.

One noteworthy feature of the Russian transition economy is the burgeoning business integration among domestic enterprises. In Russia, through stock

acquisitions by commercial banks and major industrial enterprises, the crossholdings of stocks among enterprises, and the hostile takeovers by newly emerged financial cliques led by "oligarchs," many business groups have been formed at both the federal and regional levels (Mizobata, 2004; Avdasheva, 2005). In fact, the results of our survey indicate that 323 (39.3%) of the 822 surveyed companies are affiliated with a certain business group through shareholding. This is accompanied by difficult problems in theoretically forecasting the impact of the affiliation with business groups on the managerial discipline and corporate governance of member companies. However, a series of previous studies has repeatedly verified the relatively good management performance and intensive restructuring activities of Russian group companies relative to those of independent companies not belonging to any business group (Kuznetsov & Muravjev, 2000; Perotti & Gelfer, 2001; Guriev & Rachinsky, 2005). As an explanation of the background of this situation, there is a common understanding among researchers that relatively more sound corporate governance has materialized within the business group of Russia than within independent companies (Iwasaki, 2007b). In addition, from our survey results, evidence supporting this view has been obtained (Avdasheva, 2007; Dolgopyatova et al., 2009). Accordingly, it is highly likely that Russian business groups behave as institutional investors in the U.S. that influence companies in which they invest to improve their reporting quality by using reputable auditors (Velury, 2003). Furthermore, a core group company has a strong motive to establish a unified and technologically sophisticated audit network among group companies to effectively perform the auditing of group companies' accounts subject to consolidated accounting. Thus, the following hypothesis can be made about the relationship between the participation in a business group through stock ownership and audit independence and expertise of the member company:

> H_5: Affiliation with a business group improves audit independence and expertise of the member company.

As other potential factors affecting audit independence and expertise in Russian firms, we also give attention to the effect of the establishment of an open joint-stock company as a legal form of incorporation, the succession of state assets, company size, business diversification, fund procurement from the capital market, use of bank credits, past financial performance, and business internationalization.

In accordance with our findings concerning the relationship between the above factors and management supervision in Russian firms (Iwasaki, 2007b; 2008) as

well as the arguments on the determinants of audit committee composition and audit firm choice in the previously described study and other literature (Abbott & Parker, 2000; Beasley & Salterio, 2001; Deli & Gillan, 2001; Fan & Wong, 2005; Hope et al., 2008; Rainsbury et al., 2008; Baxter, 2010), we expect that the establishment of an open joint-stock company mitigates the need for audit independence and expertise because the high transferability of stocks in an open as opposed to a closed company replaces the governance function by the statutory organs of the company. On the other hand, we predict that all seven factors, namely, company size, business diversification, business internationalization, succession of state assets, fund procurement from the capital market, use of bank credits, and past poor financial performance, are positively correlated with audit independence and expertise. This is due to the fact that the first three factors induce complexity in company management and agency problems and the last four factors tend to raise the monitoring pressure on top management from the governments, general public, shareholders, and external fund providers.

In an empirical analysis, in addition to the factors presented above, we examine the impact of the size of the audit committee on its independence and expertise. We also examine the effects of client demand for consulting services and the physical distance between the capital region and the location of the company on the audit firm choice. If it is reasonable to expect that, as committee size increases, a firm's probability to appoint more independent auditors with relevant knowledge and experiences also increases, the size of the audit committee may positively correlate with its independence and expertise.[14] With regard to the client demand for consulting services, recent studies on whether the provision of non-audit services impairs auditor independence and quality have reached mixed results, depending on the proxy for audit independence and quality used, the country studied, and the period of empirical analysis (Kinney et al., 2004; Hay et al., 2006; Lim & Tan, 2008; Duh et al., 2009; Zaman et al., 2011). Thus, the effect of the need for consulting services is theoretically unpredictable. Further, as described in Section 2, international audit firms and national major audit firms are concentrated in the capital region, and their domestic branch networks were insufficient in the first half of 2005. Therefore, it is expensive, in terms of time and money, for a Russian company to entrust an external audit to a leading firm because of the vastness of Russia and the 10-hour difference from the westernmost to the easternmost region. Accordingly, the greater the distance

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[14] See Beasley and Salterio (2001) and García-Sánchez et al. (2012), who discuss the positive relationship between the size of the board of directors and the audit committee independence and expertise in the context of the Canadian and Spanish economies.

between the capital region and a client company, the lesser the likelihood of hiring a non-indigenous audit firm.

The theoretical arguments presented in this section are summarized in Table 4.

5. EMPIRICAL ANALYSIS

In this section, we test the hypotheses regarding audit independence and expertise in Russia. First, we select the variables to be used in the empirical analysis and then report the results of our estimation. Finally, we check the overall robustness of the estimation results.

5.1 Variable selection

The focal point of our empirical analysis is the effect on audit independence and expertise of the composition of the board of directors, presence of a dominant shareholder, foreign investment, and shareholding by the government as well as affiliation with a business group. Corresponding to the discussion in the previous section, we estimate the impact of board composition by using the proportion of outsider directors to the total board members (*BOACOM*). The effects of the last four factors are examined with dichotomous dummy variables. Namely, we test the impact of the presence of a dominant shareholder, foreign investment, shareholding by the federal government, shareholding by the regional and local governments, and affiliation with a business group using *DOMSHA* with a value of 1 if the company has a shareholder whose ownership share exceeds 50 percent in total shares with voting rights, *FORFIR* with a value of 1 if the company accepts foreign investment, *FEDGOV* with a value of 1 if the company is owned by the federal government, *REGGOV* with a value of 1 if the company is a municipal enterprise, and *GROFIR* with a value of 1 for firms belonging to a certain business group through stock ownership.

The impacts of the establishment of an open joint-stock company as a legal form of incorporation on audit independence and expertise are examined using a dummy variable that captures open joint-stock companies with 1 (*OPECOM*). The impact of the succession of state assets is captured by the dummy variables, which indicate whether the company is a former state-owned (ex-municipal) privatized company (*PRICOM*) or a newly established company spun off from a state-owned (municipal) company or a privatized company (*SPIOFF*). The company size is measured by the average annual number of employees (*COMSIZ*). The extent of business diversification is represented by the number of business lines of the company in accordance with the 2-digit industrial classifications in the Russian All-Union Classifier of the National Economy Branches (*BUSLIN*). The impact of the fund procurement from the capital market and the use of bank

credits is estimated by using a dummy variable that has a value of 1 if the company issued shares or bonds in the overseas or domestic stock exchange (*MARFIN*) and a variable for the length of the lending period of bank credits borrowed by surveyed firms from 2001 to 2004 (*BANCRE*), respectively. We examine the impact of past financial performance using the industry-adjusted value of the annual average of return on equity for the past four years prior to the survey (*ROAAVE*).[15] As a proxy for the degree of business internationalization, we use the share of exports in total sales (*EXPSHA*).

The effect of the size of the audit committee on its independence and expertise is examined by the total number of audit committee members (*AUDSIZ*). The impact of the demand for consulting services on audit firm choice is estimated using an ordinal variable with a value of 0 for companies that did not conclude a consulting agreement with the audit firm at the time of the survey, a value of 1 for companies with a consulting service agreement and using the services occasionally, and a value of 2 for companies with a consulting service agreement and using the services frequently (*CONSUL*). The impact of the physical distance between the capital region and the company location is estimated by the natural logarithm of the linear distance between Moscow and the capital of the federal district (autonomous republic, territory, and province) where the surveyed company is located (*DISCAP*).

The probability of companies located in the capital or Saint Petersburg entrusting the external audit to a non-indigenous audit firm is inevitably low compared to that of companies operating in other areas for the reason reported in Section 3. To overcome this possible downward bias that companies with their headquarters in these large cities affect the estimation result of the regression model with the variable of audit firm attributes (*AUDFIR*) as a dependent variable, the dummy variable that designates the companies located in the capital or Saint Petersburg with a value of 1 (*CAPITAL*) is added to the right-hand side of the regression equation together with *DISCAP*. As reported in Section 3, there is a remarkable difference among industrial sectors in terms of audit independence and expertise. Although, for the most part, such a difference can be explained by the above variables, the impact of factors unobservable for econometricians remains. Hence, we control the fixed effects in each industry using eight dummy variables with the communications sector as a default category.

Table 5 contains the definition and descriptive statistics of the above selected variables along with the correlation coefficient with the audit system variables.

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[15] *ROAAVE* represents the distance from the median performance in each industry computed on the basis of a method proposed by Eisenberg et al. (1998).

The correlation matrix of these 19 variables is shown in Table 6. As shown in Table 5, among 6 key variables of our empirical test, *BOACOM*, *FORFIR*, *FEDGOV*, and *GROFIR* are positively associated with all three elements of the audit system variables at the 10% significance level or less, and they support the theoretical hypothesis stated in the previous section. The correlation coefficients between *DOMSHA* and the audit system variables also have a positive sign, but only the correlation with *AUDFIR* reaches the 10% significance level. *REGGOV* is also significantly related to the audit system variables. Nevertheless, their signs do not correspond with our prediction.

Among control variables, *COMSIZ*, *BUSLIN*, and *MARFIN* significantly correlate with all three of the audit system variables, and *BANCRE*, *ROAAVE*, and *EXPSHA* are significantly related to some of the audit system variables, in line with our expectations. Although *OPECOM* and *PRICOM* are also significantly associated with the audit system variables, their signs do not support our theoretical prediction. The remaining *SPIOFF* does not significantly correlate with any of the audit system variables, as in the case of *AUDSIZ*, *CONSUL*, *DISCAP*, and *CAPITAL*.

5.2 Estimation results

Our empirical analysis is carried out by taking the following four steps. In the first three subsections, we scrutinize the factors affecting the audit committee independence, the audit committee expertise, and the audit firm choice. Then, in the fourth subsection, we examine the determinants of the comprehensive choice of audit system.

5.2.1 Audit committee independence

Table 7 contains the estimation results on the determinants of the audit committee independence. The table reports the Tobit estimation[16] with the proportion of outsider auditors (*AUDCOM*) as a dependent variable and, to check the statistical robustness of each independent variable, the estimation results of the Logit model with dependent variables, such as the dummy variable that specifies companies whose outsider members account for the majority of the audit committee by 1 (*INDAUD*) and the dummy variable that assigns a value of 1 to companies whose audit committee members are all outsiders (*PERIND*). To compute standard errors, we use White's heteroskedasticity-consistent estimator.

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[16] The Tobit model, reported in Tables 7 and 8, is the estimation result of the log likelihood function, whose dependent variable has the lower limit (0) and the upper limit (1) as the threshold.

As shown in Table 7, the proportion of outsider directors (*BOACOM*) is positively estimated at the 1% significance level in any of these three models, and it verifies that the presence of outsiders on the board of directors is a crucial factor that promotes the independence of the audit committee. In fact, the coefficient of *BOACOM* largely exceeds 1.0 in Model [1], indicating an extremely high elasticity. This result is entirely consistent with the finding stated in Section 3 that both the proportion of outsider directors and that of outsider audit committee members show a noticeable polarization trend. The impact of affiliation with a business group (*GROFIR*) is estimated to be positive and significant at the 10% level in Model [1]. This estimate suggests that affiliation with a business group increases the proportion of outsider auditors by 19.1% on average in member companies, *ceteris paribus*. Meanwhile, the impacts of the presence of a dominant shareholder (*DOMSHA*) and foreign investment (*FORFIR*) do not reach the 10% significance level even though the coefficient is positive, in line with our predictions. Shareholding by the governments (*FEDGOV* and *REGGOV)* does not have significant estimates either on the federal or the regional level.

The estimation result of the variables of reliance on market financing (*MARFIN*) and use of bank credits (*BANCRE*) indicates that the fund procurement from the capital market and banks greatly affects the audit committee independence. Contrary to our prediction, the dummy variable for privatized companies (*PRICOM*) is estimated to be negative and significant at the 5% level in Model [1] in Table 7. This result suggests that, in general, the former state-owned (ex-municipal) privatized enterprises possibly have not achieved sufficient accountability, in the form of the fairness of corporate auditing, to the state and general public even though they are the successors of state assets that were declared as the "common property of the working class" under socialism.

5.2.2 Audit committee expertise

Table 8 contains the results from the regression analysis of the audit committee expertise. Here, in addition to estimating the Tobit model taking the proportion of expert audit committee members (*AUDEXP*) as a dependent variable, we estimated the Poisson model and the Logit model, which have the total number of expert auditors (*NUMEXP*) and the dummy variable for companies that hire one or more expert auditors (*EXPAPP*) in the left-hand side of their estimation equation, respectively. As shown in the table, the proportion of outsider directors on the board has a positive and significant impact not only on the independence but also on the expertise of the audit committee. For instance, the coefficient of the proportion of outsider directors (*BOACOM*) has a value of 0.69 with

statistical significance at the 5% level in Model [1]. The business group affiliation dummy variable (*GROFIR*) is estimated with a positive sign at a significance level not less than *BOACOM*, suggesting that experts are more actively appointed by business groups than independent enterprises in order to conduct a high-quality audit for affiliated companies. The estimate of *GROFIR* in Model [1] indicates that the proportion of outsider audit committee members in group companies is 46.8% higher than that of independent firms on average. The dummy variable for firms with foreign investment (*FORFIR*) is estimated to be significant and positive in Model [2]. This result is affirmed to have a certain positive effect on the appointment of expert auditors from the presence of foreign investors as well. The positive and significant estimate of shareholding by the federal government (*FEDGOV*), in contrast with the insignificant estimate of shareholding by the regional and local governments (*REGGOV*), strongly suggests a more active role of the federal government in the corporate governance of state-owned enterprises than that of regional and local governments. As in the estimation results of the audit committee independence, the coefficient of dominant shareholder dummy variable (*DOMSHA*) shows a positive sign; however, again, it does not reach the 10% significance level.

The negative and significant estimate of the dummy variable for privatized companies (*PRICOM*) exposes the unfavorable attitude of former-socialist enterprises toward the establishment of an audit committee equipped with outside experts. A similar trend is evident in the newly established companies spun off from state-owned (municipal) companies or privatized companies. Company size (*COMSIZ*) is negatively estimated in all models with a statistical significance at the 10% level or below. This result suggests that, in Russia, contrary to conventional understanding, the larger the organization of a company, the greater the negative attitude toward the use of experts as audit committee members. The impact of business internationalization (*EXPSHA*) is estimated to be significant and positive in Models [1] and [2] in Table 8, in line with our expectations, suggesting that overseas business development is a factor urging Russian companies to improve the expertise of their audit committee, which has to address international standardization of finance and accounting.

5.2.3 Audit firm choice

The estimation results regarding the determinants of an audit firm choice are presented in Table 9. Here, in addition to the order Logit estimation with the variable of audit firm attributes (*AUDFIR*) as a dependent variable, we report the estimation result of the Logit model taking *NONLOC*, a dummy variable for companies not using an indigenous domestic audit firm, and *INTAUD*, a dummy

variable that is equal to 1 if a company chooses an external auditor from among international firms, as dependent variables.

From the estimation results in Table 9, we find that the presence of outsiders on a corporate board strongly influences their company's decision making when appointing an audit firm for an external audit. The estimate of the proportion of outsider directors (*BOACOM*) demonstrates that, along with an increase in the proportion of outsider directors to all board members, the probability of hiring an audit firm with more preferable attributes as an external auditor significantly increases. Although affiliation with a business group produces the same effects as board composition, this factor is not significantly related to the probability of hiring international audit firms. In contrast to the business group affiliation dummy variable (*GROFIR*), the dummy variable for firms with foreign investment (*FORFIR*) is estimated at the 1% significance level with a positive sign in Model [3]. This evidence empirically supports a finding by Sucher & Bychkova (2001), namely, that foreign investors venturing into Russia have a strong tendency to press the company in which they have invested to perform an external audit by a leading international audit firm. The coefficients of the presence of a dominant shareholder (*DOMSHA*) and shareholding by the federal government (*FEDGOV*) are insignificant. Thus, the assumption that dominant shareholders and the federal government greatly influence decision making by their own companies regarding audit firm choice is not empirically supported. In contrast, the coefficient of shareholding by the regional and local governments (*REGGOV*) is negative and significant at the 5% level in Model [3], indicating an unfavorable attitude of municipal enterprises towards the use of an international audit firm in order to check and control the quality of their financial statements.

According to the estimation results of the variables of company size (*COMSIZ*) and reliance on market financing (*MARFIN*), a company that has a large-scale organization and procures funds from the capital market by issuing shares or bonds has a high probability of entrusting its external auditing to a non-indigenous domestic audit firm. Furthermore, distance from the capital region (*DISCAP*) has a negative and significant coefficient at the 5% level in Models [1] and [2] reported in Table 9. This result suggests that the cost and time burden represented by the physical distance from the capital is a serious factor that inhibits the appointment of non-indigenous audit firms by Russian companies.

5.2.4 Comprehensive choice of audit system

Since the audit committee and the external auditor institutionally complement one another, a person with appointive power must have a deep interest in the

combination of the two auditing bodies, in other words, the overall shape of the audit system. The significance of this strategic choice is not inferior to the individual attribute and capability of the members of the audit committee and the audit firm.

In Figure 4, the audit systems of 660 surveyed companies are sorted into four types with reference to the outsider audit committee member proportion of 50% and indicators of whether or not an indigenous domestic firm is used for the external audit. The figure shows that only 17.6% (116 of 660 companies) established an A-type audit system, which is most preferable in terms of both the independence of the audit committee and the attributes of the audit firm. Meanwhile, as many as 300 companies, or 45.5%, chose a D-type audit system, in which the majority of audit committee posts are given to insiders and which relies on indigenous audit firms for the external audit. In terms of the quality of the audit system, 244 companies, or 37.0%, fall between the A- and D-types.

To pinpoint the factors that create the situations demonstrated in Figure 4, we estimate a multinomial Logit model of discrete choice. In this model, a company choosing the D-type audit system of Figure 4 is designated as the base category (j=0), and, similarly, companies belonging to the A-, B-, and C-types are designated as the first, second, and third categories (j=1, 2, 3), respectively. This multinomial Logit model is expressed by the following formula:

$$\mathrm{P}[Y_i = j] = \frac{e^{\beta_j' x_i}}{\sum_{k=0}^{3} e^{\beta_k' x_i}}, j = 0,1,2,3,$$

where x is the data vector of the independent variables and β is the vector of the parameters.

The estimation results are reported in Table 10. According to this table, a higher proportion of outsiders on the corporate board is more effective at discouraging the company from choosing the D-type audit system, which is the worst of the four, and strongly encourages the choice of type A or B, either of which best emphasizes the audit committee independence. Affiliation with a business group also encourages member companies to select a more independent and professional audit system than that provided by the D-type; however, differently from the impact of board composition, such affiliation exerts pressure to choose an audit system that emphasizes the attributes of an audit firm. In contrast to these two factors, there is no supporting evidence that the presence of a dominant shareholder significantly affects the comprehensive choice of an audit system by a company as well as foreign investment and shareholding by the government.

From the estimation results shown in Table 10, we conclude that the expansion

of company size promotes the establishment of an audit system that is comprehensively preferable. Business diversification, in contrast, suppresses such firm behavior. Moreover, fund procurement from the capital market and banks has a similar impact to the board composition and increases the probability of choosing an audit system that secures the superiority of outsider audit committee members.[17]

5.3 Robustness check

To check the overall robustness of the empirical results reported in Tables 7 through 10, we conducted a supplemental estimation to impose a variety of sample restrictions on each regression model and confirmed that these restrictions do not cause any major changes in the estimation results. More specifically, supplemental regressions were performed with the following eight settings: (1) limiting the samples to industrial enterprises; (2) excluding companies operating in fuel/energy, metallurgy, and communications sectors, which are subject to unique government regulations regarding firm organization and business activities; (3) limiting the samples to those with a company size within the mean ±1 standard deviation to exclude very large enterprises from observations; (4) limiting the samples to companies in which the size of the audit committee is within the mean ±1 standard deviation; (5) limiting the samples to companies that have not issued securities; (6) limiting the samples to non-group-affiliated firms; (7) dividing the samples into open and closed joint-stock companies; and (8) excluding companies located in Moscow and Saint Petersburg from observations.

Moreover, we re-estimated models in which the percentages of shareholding by foreign investors, the federal government, and regional and local governments are used instead of ownership dummy variables, namely, *FORFIR*, *FEDGOV*, and *REGGOV*, respectively, and obtained no distinctive differences from the estimation results reported in Subsection 5.2 by these variable changes. We also examined the possible impacts of other ownership aspects that may affect demand for auditing, including the presence of large managerial shareholding and a block shareholder(s), imposition of an upper limit on ownership share and voting rights of shareholders, and changes in principal owners in the recent past, and found no

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[17] As an alternative regression model for the comprehensive choice of the audit system, we also estimated an ordered Logit model in which the dependent variable gives a value of 0, 1, 2, or 3 to a company choosing the D-, C-, B-, or A-type audit system, respectively, assuming that the assurance value/utility of the audit system increases by each step (i.e., D-C-B-A), and we confirmed that, in this model, independent variables estimated with statistical significance at the 10% level or less are limited to *BOACOM*, *GROFIR*, *COMSIZ*, *MARFIN*, and *DISCAP* and the signs of these five variables correspond with those in the multinomial Logit model reported in Table 10.

statistically significant and systematic correlation between these factors and the audit system variables, as is the case with the presence of a dominant shareholder.

Furthermore, we performed supplemental regressions using the industry-adjusted value of the frequency of dividend payment and the gross profit to sales as the proxy for past financial performance and confirmed that these two alternative indices also have the same sign and statistical significance as an annual average of ROA.

On the basis of the above findings, we confidently report that the results of regression analysis conducted in this paper are robust across the various specifications.

6. CONCLUSION

In this paper, we empirically analyze the firm-level determinants of audit independence and expertise as well as the comprehensive choice of corporate audit system in transition Russia using the results of a Japan-Russia enterprise survey conducted throughout the country in 2005.

The survey results show that Russian joint-stock companies, in comparison with those of Western and Asian Pacific countries, have a questionable audit system. More specifically, the independence of the audit committee in Russian firms is well below the average level for companies in the above countries. In addition, the appointment of an international audit firm as an external auditor is very limited, and most Russian companies have a strong tendency to make external audit contracts with indigenous domestic audit firms. Moreover, Russian firms are generally negative about the appointment of outside experts as audit committee members. Furthermore, from the viewpoint of the independence of the audit committee, remarkable polarization among Russian companies is occurred.

The empirical analysis in this paper presents evidence that is consistent with that in past studies regarding the impacts of outsider directorship and foreign investment on corporate auditing in other countries as well as with that in preceding works on business integration and corporate governance of group companies in Russia, referenced in Section 4. In other words, we verified that the following types of Russian companies are more likely to establish a comparatively desirable audit system than other firms: a company in which the outsider directors take a strong initiative within the corporate board; a company that has accepted foreign investment; and a company that performs business integration with a specific business group through stock ownership. From another perspective, we conclude that the less independent and professional audit system of Russian firms than the international practice is deeply rooted in a weak

countervailing power of outsider board directors against management executives, low foreign direct investment within the country, and a loose management discipline of independent companies that are operating in isolation in terms of their capital relationship.

As reported above, the composition of the board of directors, foreign investment, and affiliation with a business group through shareholding are highly important determinants of audit independence and expertise of Russian companies. The extent of the impact of these three factors, however, differs greatly between them. Although the presence of outsiders on the corporate board has a significantly positive impact on every aspect concerning the independence and expertise of a corporate audit, there is a tendency for the main emphasis to be focused on the audit committee composition rather than the audit firm choice. Meanwhile, management integration with a business group exerts a noteworthy effect on the assignment of outside experts as audit committee members and the choice of an audit firm from non-indigenous firms by an affiliated company, and foreign investment has a strong promotional effect, especially on the appointment of an international audit firm.

Our empirical evidence also indicated that, consistently with the findings in Frye & Iwasaki (2011) on the role of state representatives on the board of directors in corporate governance, shareholding by the federal government tends to increase the possibility of hiring expert auditors from the outside by state-owned enterprises. We conjecture that the federal government attempts to promote sound corporate auditing in domestic firms. Meanwhile, we could not obtain any supporting evidence of a close relationship between the presence of dominant shareholders and audit independence and expertise in their companies. One possible interpretation of this result is that the audit system in a typical Russian company clearly reflects the intention of the company's dominant shareholder through the board of directors and, hence, the need to exert direct and incremental control over audit activities of a company is very limited in practice. Needless to say, further empirical examination of this point is necessary.

Moreover, from the empirical results of this study, we found that company size, fund procurement from the capital market and banks, and overseas business advancement have significant impacts on audit independence and expertise in Russia. We also found that former state-owned (ex-municipal) privatized enterprises and newly established companies spun off from state-owned (municipal) companies or privatized enterprises tend to have a negative attitude toward the establishment of an open corporate audit system, *ceteris paribus*.[18]

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[18] This is probably due to the self-contained and exclusive organizational culture

Soundness of company management that sustains the market economy at the firm level is one of the economic endeavors that Russia has to take seriously. As reported above, the establishment of a rigid and fair corporate audit system is an effective measure for overcoming this issue. However, our empirical evidence suggests that it is not an easy task. Persistent efforts of the Russian government and citizenry are required, as well as technical and financial assistance by the international community.

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Table 1: Descriptive statistics on the total number of audit committee members and the number of corporate auditors by their attributes in 69
joint-stock companies

	Mean	S. D.	Median	Min.	Max.	25 percentile	75 percentile
Total number of audit committee members	3.53	2.14	3	1	40	3	4
Insider auditors	1.98	1.97	2	0	30	1	3
Auditors representing rank-and-file employees and labor unions	1.76	1.97	2	0	30	0	3
Other insider auditors	0.22	0.78	0	0	5	0	0
Outsider auditors	1.55	1.77	1	0	12	0	3
Auditors representing private shareholders	0.68	1.28	0	0	9	0	1
Expert auditors	0.58	1.18	0	0	10	0	1
Auditors representing the government	0.18	0.58	0	0	5	0	0
Other outsider auditors	0.11	0.56	0	0	7	0	0

This table contains descriptive statistics on the total number of audit committee members and the number of corporate auditors by their attributes of 690 Russian joint-stock companies that participated in a Japan-Russia joint enterprise survey conducted in 2005. Sample companies were randomly selected among firms with more than 100 workers in the industrial and communications sectors. For more details, see Section 3 of the paper.

**Table 2:** International comparison of the total number of corporate auditors and proportion of outsider audito

	Analysis period	Sample size	Total number of corporate auditors			Proportion of outsider auditors (%)		
			Mean	S. D.	Median	Mean	S. D.	Median
North America								
U.S. listed firms [1]	1992-93	692				79.6		
U.S. major firms [2]	1992-96	282	4.53			85		
U.S. listed firms [3]	2000	167	4.48		4			
U.S. commercial banks [4]	2000-01	989	4.31	1.47	4	88.0	16.8	100.0
Canadian non-financial firms [5]	1993-97	66				86.6	16.2	100.0
Canadian major firms [6]	1994	627	3.5	0.98	3	82.3	15.7	75.0
Canadian listed firms [7 a]	1997-2003	72	3.56		3	91.1		100.0
Europe								
Listed firms in 15 EU countries [8]	2008	270				73		
U.K. non-financial listed firms [9 a]	2001-02	259	3.12	0.05	3	34.7	34.1	33.0
U.K. major firms [10]	2006	71	4.11	2.75				
German listed firms [11]	2007	150	4.0					
Austrian listed firms [11]	2007	56	4.13					
Belgian listed firms [12 b]	2001-02	29	3.69			83		
Spanish non-financial listed firms [13]	1998-2001	75	3.47	0.99	3	90	18	100
Spanish listed firms [14 b c]	2003	69				91		100
Swiss listed firms [15 a]	2004	167	3.3			67		
Russian joint-stock companies [16]	2005	690	3.53	2.14	3	42.8	40.7	33.0
Asian-Pacific								
Japanese listed firms [17]	2009	215	4.2			72.7		
Chinese IPO firms [18]	2001-04	184	4.41	2.08	3			
Chinese Hong Kong listed firms [19 a]	2007	46	3.63	1.00	3	83.2	17.1	81.7
Singaporean and Malaysian listed firms [20 a]	2000	252				69.7	10.4	66.7
Australian listed firms [21 a]	1997	109	3.6	0.99	3	65.9	27.4	66.7
Australian firms [22 a]	2001	81	4.58	2.14		57.2	40.8	
New Zealand firms [22 a]	2001	28	4.61	1.50		62.7	39.0	
New Zealand listed firms [23 b]	2004-05	96	3.46	0.94	3	94.1	13.6	100

This table lists the total number of corporate auditors and the proportion of outsider auditors in North-American, European, and Asian-Pacific companies based on the following 23 studies: 1: Klein (2002b); 2: Xie et al. (2003); 3: Chan and Li (2008); 4: Zhou and Chen (2004); 5: Erickson et al. (2005); 6: Beasley and Salterio (2001); 7: Charitou et al. (2007); 8: RiskMetrics Group (2009); 9: Mangena and Tautingana (2007); 10: Adelopo and Jallow (2008); 11: Velte (2010); l2: Willekens et al. (2004); 13: Ruiz-Barbadillo et al. (2003); 14: Méndez and García (2007); 15: Canepa and Ruigrok (2005); 16: this study; 17: Fujishima (2010); 18: Lin and Liu (2009); 19: Lin et al. (2009); 20: Bradbury et al. (2004); 21: Cotter and Silvester (2003); 22: Goodwin (2003); 23: Sharma et al. (2009).

[a] Proportion of independent auditors.

[b] Proportion of non-executive officers

[c] The proportion of outsider auditors is calculated using the data of the proportion of executive officers
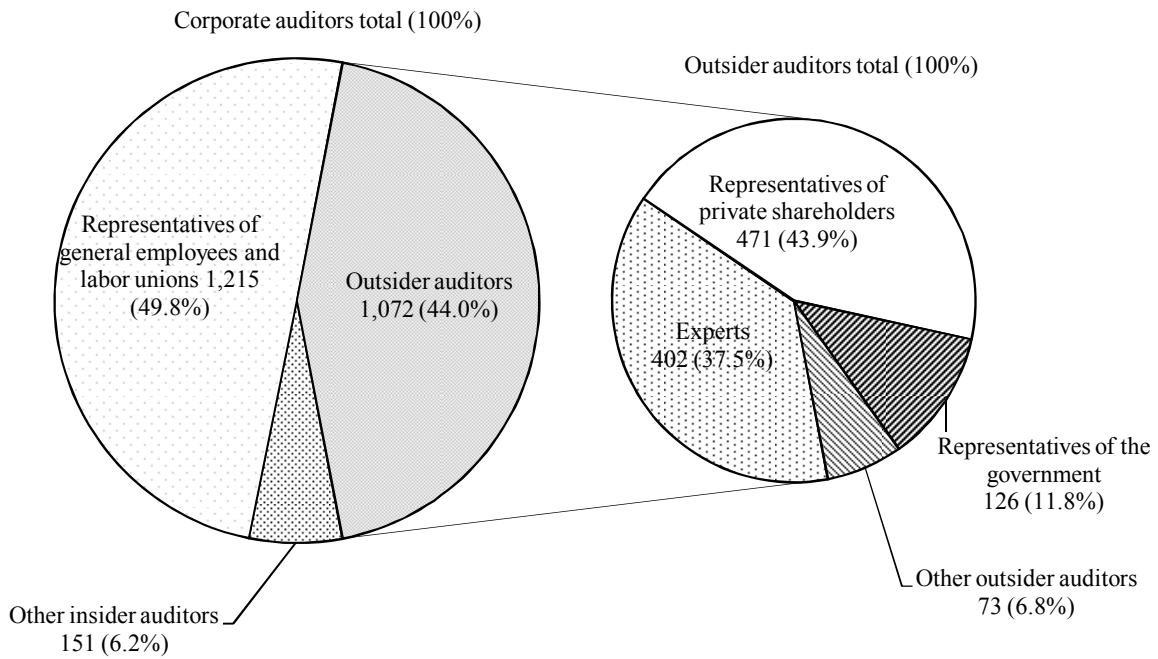
Figure 1: Classification of 2,438 corporate auditors of 690 companies by their attributes

The samples are Russian joint-stock companies that participated in the Japan-Russia joint enterprise survey conducted in 2005. "Insider auditor" denotes an auditor selected from among rank-and-file employees, labor union members, and management staff, and "outsider director" denotes an auditor selected from among persons other than the above-mentioned ones defined as insider auditors.
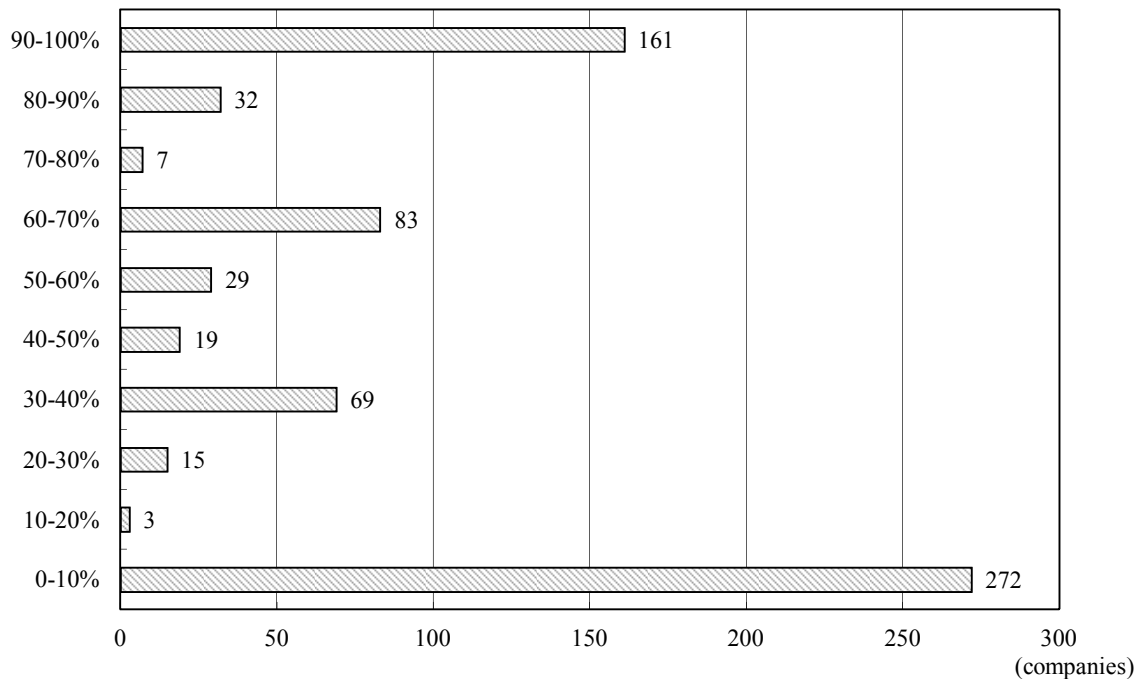
Figure 2: Proportion of outsider auditors in the audit committee of 690 Russian joint-stock companies

The samples are Russian joint-stock companies that participated in the Japan-Russia joint enterprise survey conducted in 2005. The proportion of outsider auditors is measured by dividing the number of outsider auditors by the total members of the audit committee for each sample firm. The basic statistics of the proportion of outsider auditors are as follows: mean: 42.82; standard deviation: 40.70; median: 33; skewness: 0.25; kurtosis: 1.45.
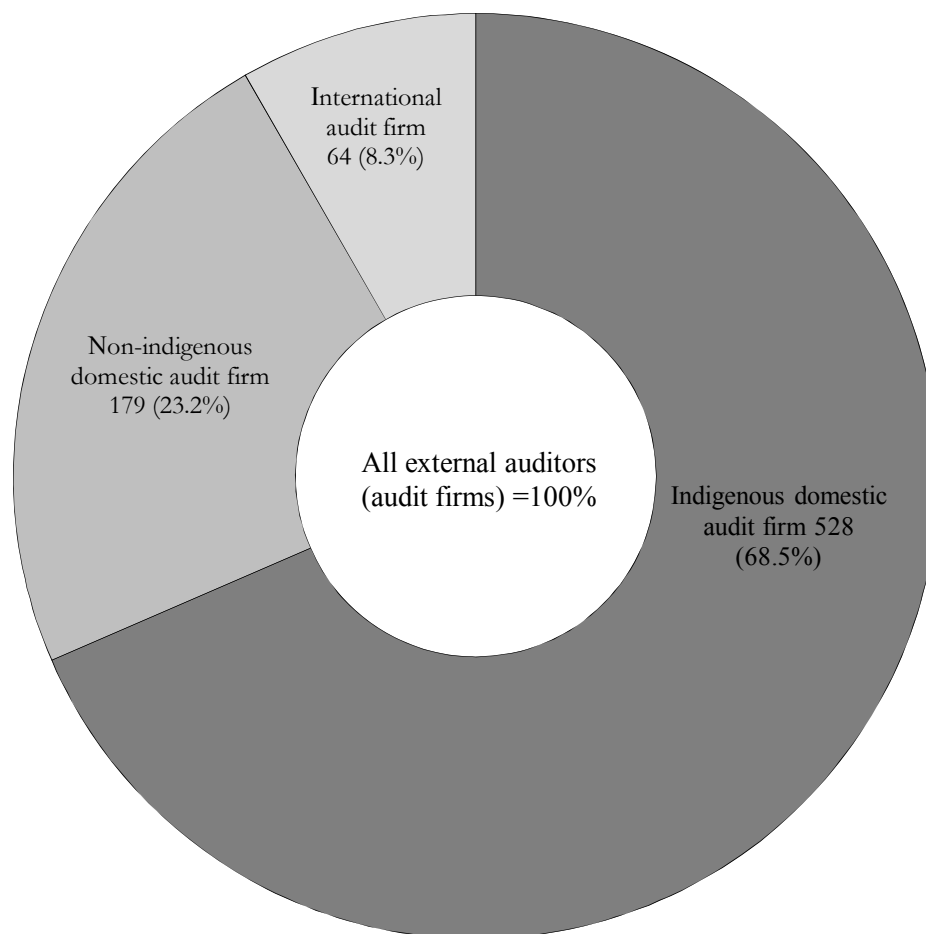
Figure 3: Classification of external auditors (audit firms) of 771 joint-stock companies by their attributes

This figure classifies the audit firms that conclude an external audit contract with 771 Russian joint-stock companies that participated in a Japan-Russia joint enterprise survey conducted in 2005. "Indigenous domestic audit firm" denotes a Russian audit firm located in the same federal district of the surveyed company.

Table 3: Industry-to-industry comparison of audit independence and expertise

	Audit system variables		
	Proportion of outsider auditors (*AUDCOM*)	Proportion of expert auditors (*AUDEXP*)	Audit firm attributes (*AUDFIR*)
Industrial sector	0.404	0.162	0.337
Fuel and energy	0.707	0.264	0.710
Metallurgy	0.569	0.223	0.735
Machine-building and metal working	0.427	0.166	0.280
Chemical and petrochemical	0.441	0.258	0.290
Wood, paper, and wood products	0.419	0.222	0.356
Light industry	0.211	0.081	0.273
Food industry	0.325	0.119	0.296
Construction materials	0.277	0.095	0.153
Communications sector	0.726	0.230	1.078
N	690	690	771
Comparison between the industrial and communications sectors			
t test on the equality of means	-5.554 ***	-1.456	-9.406 ***
Wilcoxon rank sum test	-5.385 ***	-0.798	-7.436 ***
Multiple comparison among 9 industries			
ANOVA (*F*)	12.480 ***	2.770 ***	18.140 ***
Bartlett test (χ^2)	3.831	38.626 ***	62.954 ***
Kruskal-Wallis test (χ^2)	79.795 ***	12.259	67.303 ***

This table presents results from an industry-to-industry comparative analysis of audit independence and expertise in Russian joint-stock companies that participated in a Japan-Russia joint enterprise survey conducted in 2005. The proportion of outsider (expert) auditors, *AUDCOM* (*AUDEXP*), is measured by dividing the number of outsider (expert) auditors by the total members of the audit committee for each sample firm, and it is a continuous variable taking values of $0.00 \leq x \leq 1.00$. The audit firm attribute, *AUDFIR*, is the ordinal variable that gives a value of 0 to a company hiring an indigenous domestic audit firm as its external auditor, 1 to a company hiring a non-indigenous domestic audit firm, and 2 to a company hiring an international audit firm. The result of the Welch test is reported instead of the *t* test when the null hypothesis in which the population variance is equal is rejected by an F test on homoskedasticity. *** denotes statistical significance at the 1% level.

Table 4: Theoretical predictions of the impacts of firm organization and business activities on audit independence and expertise in the context of a Russian transition economy

	Predicted sign
Presence of outsiders on the board of directors	+
Presence of a dominant shareholder	+
Foreign investment	+
Shareholding by the federal government	+
Shareholding by the regional and local governments	-
Affiliation with a business group	+
Establishment of an open joint-stock company as the corporate form	-
Succession of state assets	+
Company size	+
Business diversification	+
Fund procurement from the capital market	+
Use of bank credits	+
Poor financial performance	+
Business internationalization	+
Size of the audit committee	+
Demand for consulting services	?
Physical distance between the capital region and the location of the company	-

This table is a summary of the theoretical predictions of the impact of potential factors on audit independence and expertise in Russia on the basis of the discussion in Section 4 of the paper. The sign '+' denotes a positive correlation between a given factor and audit independence and expertise, '-,' for a negative correlation, and '?' indicates that the effect is unpredictable. The size of the audit committee is regarded as a special factor concerning its independence and expertise, and the demand for consulting services and the physical distance between the capital region and the location of the company are considered as special factors affecting the independence and expertise of the external auditor (audit firm).

Table 5: Definition and descriptive statistics of the variables used in empirical analysis and correlation coefficient with the audit system variables

Definition of variable (variable name)	Descriptive statistics					Correlation coefficient with the audit system variables		
	Mean	S. D.	Median	Min.	Max.	Proportion of outsider auditors (AUDCOM)	Proportion of expert auditors (AUDEXP)	Audit firm attributes (AUDFIR)
Proportion of outsider directors (BOACOM)	0.49	0.35	0.56	0.00	1.00	0.493 ***	0.176 ***	0.305 ***
Dummy for firms with a dominant shareholder (DOMSHA)	0.87	0.33	1	0	1	0.025	0.037	0.062 *
Dummy for firms with foreign investment (FORFIR)	0.14	0.35	0	0	1	0.203 ***	0.118 ***	0.398 ***
Dummy for firms owned by the federal government (FEDGOV)	0.13	0.34	0	1	0	0.094 **	0.075 *	0.175 ***
Dummy for firms owned by the regional and local governments (REGGOV)	0.09	0.28	0	1	0	0.093 **	0.022	0.063 *
Business group member dummy (GROFIR)	0.39	0.49	0	0	1	0.310 ***	0.183 ***	0.367 ***
Open joint-stock company dummy (OPECOM)	0.68	0.47	1	0	1	0.061	0.068 *	0.034
Dummy for former state-owned or ex-municipal privatized companies (PRICOM)	0.69	0.46	1	0	1	-0.118 ***	-0.056	-0.037
Dummy for firms separated from state-owned or privatized enterprises (SPIOFF)	0.10	0.29	0	0	1	0.037	-0.010	-0.043
Total number of employees (COMSIZ)	1884.44	5570.00	465	106	74000	0.187 ***	0.076 **	0.346 ***
Number of business lines (BUSLIN)	2.15	2.05	1	1	12	0.111 ***	0.080 **	0.101 ***
Dummy for firms that issued shares or bonds in the overseas or domestic stock exchange (MARFIN)	0.13	0.34	0	0	1	0.258 ***	0.088 **	0.461 ***
Firms that used bank credits and their average lending period (BANCRE)	2.53	1.45	3	0	5	0.037	0.033	0.121 ***
Annual average of ROA in 2001-2004 (ROAAVE)	0.12	0.90	0.00	-8.08	4.26	-0.087 **	-0.007	0.033
Share of exports in total sales (EXPSHA)	0.88	1.20	0	0	5	0.010	0.049	0.083 **
Size of the audit committee (AUDSIZ)	3.53	2.14	3	1	40	0.046	-0.020	-
Firms that conclude consulting agreement with audit firm and frequency of their use of services (CONSUL)	1.07	0.78	1	0	2	-	-	-0.044
Linear distance between Moscow and the capital of the federal district where the company is located (DISCAP)	1091.17	1242.34	702.86	6773.13	0.00	-	-	0.005
Dummy for firms located in Moscow or Saint Petersburg (CAPITAL)	0.08	0.28	0	0	1	-	-	0.046

This table presents the definition, descriptive statistics, and data source of variables used in the empirical analyses and the correlation coefficients with the audit system variables. See Table 3 for a definition of the audit system variables. The samples are Russian joint-stock companies that participated in a Japan-Russia joint enterprise survey conducted in 2005. The number of business lines (BUSLIN) originates in the SKRIN open database. ROA (ROAAVE) originates in the SPARK open database. The linear distance between Moscow and the capital of the federal district where the company is located (DISCAP) is computed using the materials provided by Kazuhiro Kumo. All other variables were created on the basis of the results of the 2005 joint enterprise survey. The natural logarithm of COMSIZ, AUDSIZ, and DISCAP is used in the regression analysis. ***, **, and * denote statistical significance at the 1%, 5%, and 10% The following are the supplementary variable definitions: BOACOM, a continuous variable measured by dividing the number of outsider directors by the total number of board members; GROFIR, a dichotomous variable that assigns a value of 1 to member firms of a business group; OPECOM, a dichotomous variable that equals 1 if the company was established as an open joint-stock company; BUSLIN, a proxy for the level of business diversification measured by the Russian All-Union Classifier of the National Economy Branches (OKONKh) two-digit classification; BANCRE, "firms that used bank credits and their average lending period" fall under one of the following 6 categories: 0, did not use any bank credits during the period from 2001 to 2004; 1, used bank credits and their average lending period was less than 3 months; 2, used bank credits and their average lending period ranged from 3 months to less than 6 months; 3, used bank credits and their average lending period ranged from 6 months to less than one year; 4, used bank credits and their average lending period ranged from one year to less than 3 years; 5, used bank credits and their average lending period was more than 3 years; ROAAVE, industry-adjusted using a method proposed by Eisenberg et al. (1998); EXPSHA, "share of exports in total sales" falls under one of the following 6 categories: 0, 0%; 1, 10% or less; 2, 10.1 to 25.0%; 3, 25.1 to 50.0%; 4, 50.1 to 75.0%; 5, more than 75%; AUDSIZ: total members of the audit committee; CONSUL, "firms that conclude consulting agreement with audit firm and frequency of their use of services" fall under one of the following 3 categories: 0, did not conclude any agreement with the audit firm adopted as the accounting auditor at the time of the survey; 1, concluded a consulting agreement and occasionally used its services; 2, concluded a consulting agreement and frequently used its services; DISCAP, the unit is kilometers.

Table 6: Correlation matrix of the variables used in the empirical analyses

	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]	[l]	[m]	[n]	[o]	[p]	[q]	[r]	[s]
[a] *BOACOM*	1.000																		
[b] *DOMSHA*	0.093 **	1.000																	
[c] *FORFIR*	0.275 ***	-0.005	1.000																
[d] *FEDGOV*	0.212 ***	-0.047	0.179 ***	1.000															
[e] *REGGOV*	0.092 **	0.066 *	0.074 *	0.130 ***	1.000														
[f] *GROFIR*	0.344 ***	0.080 **	0.193 ***	0.124 ***	0.041	1.000													
[g] *OPECOM*	0.021	0.067 *	-0.028	0.054	-0.040	0.054	1.000												
[h] *PRICOM*	-0.045	0.001	0.023	0.047	-0.032	-0.151 ***	-0.008	1.000											
[i] *SPIOFF*	-0.001	-0.021	-0.051	-0.043	0.067 *	0.042	-0.007	-0.490 ***	1.000										
[j] *COMSIZ*	0.276 ***	-0.021	0.355 ***	0.227 ***	0.075 **	0.221 ***	-0.100 ***	0.085 **	-0.024	1.000									
[k] *BUSLIN*	0.165 ***	-0.008	0.156 ***	0.118 ***	0.014	0.109 ***	-0.003	0.064 *	0.010	0.266 ***	1.000								
[l] *MARFIN*	0.281 ***	0.029	0.455 ***	0.298 ***	0.091 **	0.288 ***	0.019	0.029	-0.016	0.543 ***	0.167 ***	1.000							
[m] *BANCRE*	0.093 **	0.165 ***	0.128 ***	0.017	0.060	0.093 ***	-0.056	0.008	-0.018	0.302 ***	0.079 **	0.180 ***	1.000						
[n] *ROAAVE*	-0.114 ***	0.020	0.004	-0.006	-0.009	0.050	0.015	-0.071 *	-0.001	-0.010	-0.036	-0.031	-0.055	1.000					
[o] *EXPSHA*	0.072 *	0.052	0.148 ***	-0.064 *	0.003	0.033	-0.048	-0.025	0.092 ***	0.223 ***	0.048	-0.004	0.108 ***	0.097 **	1.000				
[p] *AUDSIZ*	0.175 ***	-0.021	0.172 ***	0.180 ***	0.044	0.095 **	-0.041	0.082 **	-0.074 **	0.332 ***	0.139 ***	0.254 ***	0.026	-0.060	-0.003	1.000			
[q] *CONSUL*	-0.028	-0.049	-0.057	-0.018	-0.055	-0.038	0.018	0.031	0.037	0.004	0.057	-0.028	0.018	0.037	-0.015	0.029	1.000		
[r] *DISCAP*	0.073 **	0.005	0.012	-0.012 *	0.029	0.040	0.125 ***	0.003	0.031	-0.019	-0.089 **	0.012	-0.034	-0.033	-0.026	0.019	-0.061 *	1.000	
[s] *CAPITAL*	-0.002	-0.012	0.108 ***	0.007	-0.064 *	0.017	0.000	-0.084 **	-0.024	0.027	0.116 ***	0.064 *	0.031	0.096 **	0.049	-0.005	0.039	-0.539 ***	1.000

This table presents the correlation matrix of 19 independent variables used in the empirical analyses. Table 5 provides the definitions of the variables. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7: Regression analysis of audit committee independence

Model	[1]	[2]	[3]
Estimator	Tobit	Logit	Logit
Dependent variable	*AUDCOM*	*INDAUD*	*PERIND*
Proportion of outsider directors (*BOACOM*) (+)	1.1636 ***	3.4454 ***	3.3427 ***
	(0.151)	(0.464)	(0.588)
Presence of a dominant shareholder (*DOMSHA*) (+)	0.0573	-0.1171	0.1641
	(0.117)	(0.394)	(0.417)
Foreign investment (*FORFIR*) (+)	0.0116	0.1056	0.1293
	(0.140)	(0.437)	(0.456)
Shareholding by the federal government (*FEDGOV*) (+)	-0.0214	-0.3184	-0.4911
	(0.108)	(0.407)	(0.473)
Shareholding by the regional and local governments (*REGGOV*) (-)	0.0552	0.3916	-0.9053
	(0.113)	(0.487)	(0.605)
Affiliation with a business group (*GROFIR*) (+)	0.1909 *	0.4369	0.4491
	(0.099)	(0.296)	(0.355)
Establishment of an open joint-stock company (*OPECOM*) (-)	0.0361	0.1360	0.1823
	(0.083)	(0.274)	(0.332)
Privatization of a state-owned or municipal enterprise (*PRICOM*) (+)	-0.3362 **	-0.6449	-0.5045
	(0.135)	(0.415)	(0.442)
Separation from a state-owned or privatized enterprise (*SPIOFF*) (+)	-0.1837	-0.3031	-0.2996
	(0.168)	(0.528)	(0.577)
Company size (*COMSIZ*) (+)	-0.0198	-0.0446	0.0597
	(0.044)	(0.160)	(0.176)
Extent of business diversification (*BUSLIN*) (+)	0.0158	-0.0649	0.0432
	(0.018)	(0.063)	(0.075)
Reliance on market financing (*MARFIN*) (+)	0.3735 **	2.1393 ***	0.2709
	(0.151)	(0.614)	(0.589)
Use of bank credits (*BANCRE*) (+)	0.0201	0.2387 **	0.0399
	(0.032)	(0.107)	(0.128)
Past financial performance (*ROAAVE*) (-)	-0.0335	-0.0328	-0.2195
	(0.049)	(0.137)	(0.180)
Degree of business internationalization (*EXPSHA*) (+)	0.0437	0.0242	0.1478
	(0.041)	(0.120)	(0.150)
Size of the audit committee (*AUDSIZ*) (+)	-0.2398	-0.5035	-2.6752 ***
	(0.156)	(0.501)	(0.686)
Const.	0.3144	0.4544	0.4099
	(0.400)	(1.303)	(1.470)
Industry dummies	Yes	Yes	Yes
N	424	424	424
Pseudo R^2	0.20	0.31	0.27
Log likelihood	-354.12	-194.32	-153.03
F test/Wald test (χ^2)	6.27 ***	125.09 ***	85.04 ***

This table contains the results from the regressions of audit committee independence on the variables reflecting firm organization and business activities. The samples are Russian joint-stock companies that participated in a Japan-Russia joint enterprise survey conducted in 2005. The proportion of outsider auditors (*AUDCOM*), the dummy variable for firms whose outsider auditors account for the majority of the audit committee (*INDAUD*), and the dummy variable that gives a value of 1 if a company whose corporate auditors are all outside persons (*PERIND*) are used as dependent variables. Table 5 provides the definitions of the independent variables. The predicted signs are indicated in parentheses following the abbreviation of the independent variables. Standard errors are computed using White's heteroskedasticity-consistent estimator and given in parentheses beneath the regression coefficients. The *F* and the Wald tests test the null hypothesis in which all coefficients are zero. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8: Regression analysis of audit committee expertis

Model	[1]	[2]	[3]
Estimator	Tobit	Poisson	Logit
Dependent variable	*AUDEXP*	*NUMEXP*	*EXPAPP*
Proportion of outsider directors (*BOACOM*) (+)	0.6948 **	1.0600 ***	0.8150 *
	(0.313)	(0.364)	(0.423)
Presence of a dominant shareholder (*DOMSHA*) (+)	0.4361	0.5079	0.5963
	(0.285)	(0.371)	(0.439)
Foreign investment (*FORFIR*) (+)	0.4490	0.4423 *	0.4954
	(0.290)	(0.269)	(0.369)
Shareholding by the federal government (*FEDGOV*) (+)	0.4546 *	0.4616 *	0.7271 *
	(0.251)	(0.249)	(0.384)
Shareholding by the regional and local governments (*REGGOV*) (-)	-0.3372	-0.4997	-0.3829
	(0.303)	(0.376)	(0.499)
Affiliation with a business group (*GROFIR*) (+)	0.4683 **	0.5023 **	0.7221 **
	(0.212)	(0.241)	(0.295)
Establishment of an open joint-stock company (*OPECOM*) (-)	0.0477	0.1582	-0.0517
	(0.188)	(0.219)	(0.278)
Privatization of a state-owned or municipal enterprise (*PRICOM*) (+)	-0.4806 *	-0.5571 **	-0.6946 *
	(0.257)	(0.249)	(0.363)
Separation from a state-owned or privatized enterprise (*SPIOFF*) (+)	-0.5719	-0.9411 **	-0.7014
	(0.355)	(0.412)	(0.523)
Company size (*COMSIZ*) (+)	-0.2123 **	-0.1708 *	-0.2896 *
	(0.102)	(0.104)	(0.152)
Extent of business diversification (*BUSLIN*) (+)	0.0328	0.0536	0.0404
	(0.043)	(0.046)	(0.063)
Reliance on market financing (*MARFIN*) (+)	0.1505	-0.0146	0.2600
	(0.357)	(0.352)	(0.523)
Use of bank credits (*BANCRE*) (+)	0.0511	0.0452	0.0122
	(0.067)	(0.080)	(0.100)
Past financial performance (*ROAAVE*) (-)	-0.0809	-0.0670	-0.1486
	(0.085)	(0.107)	(0.138)
Degree of business internationalization (*EXPSHA*) (+)	0.1663 *	0.2062 **	0.1639
	(0.091)	(0.089)	(0.134)
Size of the audit committee (*AUDSIZ*) (+)	-0.1570	1.3182 ***	0.3157
	(0.329)	(0.243)	(0.478)
Const.	-0.9331	-3.5816 ***	-2.0715
	(0.950)	(1.059)	(1.393)
Industry dummies	Yes	Yes	Yes
N	424	424	424
Pseudo R^2	0.09	0.18	0.10
Log likelihood	-260.00	-372.35	-203.60
F test/Wald test (χ^2)	1.64 **	129.49 ***	43.93 ***

This table contains the results from the regressions of audit committee expertise on the variables reflecting firm organization and business activities. The samples are Russian joint-stock companies that participated in a Japan-Russia joint enterprise survey conducted in 2005. The proportion of expert auditors (*AUDEXP*), the total number of expert auditors (*NUMEXP*), and the dummy variable that assigns a value of 1 if a company that appoints more than one expert auditor from the outside (*EXPAPP*) are used as dependent variables. Table 5 provides the definitions of the independent variables. The predicted signs are indicated in parentheses following the abbreviation of the independent variables. Standard errors are computed using White's heteroskedasticity-consistent estimator and given in parentheses beneath the regression coefficients. The F and the Wald tests test the null hypothesis in which all coefficients are zero. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9: Regression analysis of audit firm choice

Model	[1]	[2]	[3]
Estimator	Ordered Logit	Logit	Logit
Dependent variable	*AUDFIR*	*NONLOC*	*INTAUD*
Proportion of outsider directors (*BOACOM*) (+)	1.0342 ***	1.2181 ***	1.5474 *
	(0.372)	(0.395)	(0.864)
Presence of a dominant shareholder (*DOMSHA*) (+)	0.5012	0.4049	0.6421
	(0.410)	(0.422)	(1.161)
Foreign investment (*FORFIR*) (+)	0.7064 *	0.3519	1.9633 ***
	(0.371)	(0.394)	(0.720)
Shareholding by the federal government (*FEDGOV*) (+)	-0.0605	0.0738	0.1046
	(0.374)	(0.406)	(0.732)
Shareholding by the regional and local governments (*REGGOV*) (-)	-0.1460	0.0725	-1.3958 **
	(0.385)	(0.444)	(0.630)
Affiliation with a business group (*GROFIR*) (+)	0.7141 ***	0.7859 ***	0.7313
	(0.271)	(0.266)	(0.879)
Establishment of an open joint-stock company (*OPECOM*) (-)	-0.0619	-0.0412	0.4926
	(0.260)	(0.274)	(0.597)
Privatization of a state-owned or municipal enterprise (*PRICOM*) (+)	-0.3147	-0.3723	-0.4940
	(0.337)	(0.356)	(0.686)
Separation from a state-owned or privatized enterprise (*SPIOFF*) (+)	0.5376	0.7355	-1.5425
	(0.435)	(0.477)	(0.987)
Company size (*COMSIZ*) (+)	0.4866 ***	0.5537 ***	0.2771
	(0.138)	(0.153)	(0.227)
Extent of business diversification (*BUSLIN*) (+)	-0.0831	-0.1065	0.1470
	(0.068)	(0.070)	(0.181)
Reliance on market financing (*MARFIN*) (+)	1.2127 **	0.9747 **	1.9923 **
	(0.533)	(0.447)	(0.921)
Use of bank credits (*BANCRE*) (+)	0.0423	-0.0173	0.0066
	(0.104)	(0.102)	(0.369)
Past financial performance (*ROAAVE*) (-)	0.1789	0.1488	0.0909
	(0.162)	(0.155)	(0.342)
Degree of business internationalization (*EXPSHA*) (+)	0.0969	0.0634	0.1395
	(0.119)	(0.129)	(0.339)
Demand for consulting services (*CONSUL*) (?)	0.0472	0.0299	0.2048
	(0.160)	(0.166)	(0.339)
Distance from the capital region (*DISCAP*) (-)	-0.2125 **	-0.2029 **	-0.3780
	(0.103)	(0.103)	(0.244)
Location in Moscow or Saint Petersburg (*CAPITAL*) (-)	-0.5793	-1.0991 *	2.5885 *
	(0.686)	(0.624)	(1.429)
Const.	-	-3.1881 **	-2.4953
	(-)	(1.284)	(2.539)
Industry dummies	Yes	Yes	Yes
N	438	438	132
Pseudo R^2	0.24	0.26	0.43
Log likelihood	-260.86	-199.22	-44.42
Wald test (χ^2)	133.61 ***	89.48 ***	38.24 **

This table contains the results from the regressions of audit firm choice on the variables reflecting firm organization and business activities. The samples are Russian joint-stock companies that participated in a Japan-Russia joint enterprise survey conducted in 2005. The ordinal variable that gives a value of 0 to companies adopting an indigenous domestic audit firm as its accounting auditor, 1 to companies adopting a non-indigenous domestic audit firm, and 2 to companies adopting an international audit firm (*AUDFIR*), the dummy variable that captures companies not adopting an indigenous domestic audit firm (*NONLOC*), and the dummy variables for firms that made choice of the company's external auditor from international firms (*INTAUD*) are used as dependent variables. Table 5 provides the definitions of the independent variables. The predicted signs are indicated in parentheses following the abbreviation of the independent variables. Standard errors are computed using White's heteroskedasticity-consistent estimator and given in parentheses beneath the regression coefficients. The Wald test tests the null hypothesis in which all coefficients are zero. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Figure 4: Classification of the audit system in 660 joint-stock companies by a combination of audit committee composition and audit firm attributes

		Audit committee composition	
		Proportion of outsider auditors, 50% or more	Proportion of outsider auditors, less than 50%
Audit firm attributes	International audit firm or non-indigenous domestic auditing firm	Type-A 116 companies (17.6%)	Type-B 88 companies (13.3%)
	Indigenous domestic audit firm	Type-C 156 companies (23.6%)	Type-D 300 companies (45.5%)

This figure classifies the audit system of 660 Russian joint-stock companies that participated in a Japan-Russia joint enterprise survey conducted in 2005 in accordance with the audit committee composition and the audit firm attributes. The proportion of outsider auditors is measured by dividing the number of outsider auditors by the total members of the audit committee for each sample firm. "Indigenous domestic audit firm" denotes a Russian audit firm located in the same federal district of the surveyed company.

Table 10: Regression analysis of comprehensive choice of the audit system

Estimator	Multinomial Logit		
Dependent variable (type of audit system)	Type-A	Type-B	Type-C
Proportion of outsider directors (*BOACOM*) (+)	4.6823 ***	0.9924 *	3.5474 ***
	(0.875)	(0.542)	(0.570)
Presence of a dominant shareholder (*DOMSHA*) (+)	-0.2412	0.8129	0.0509
	(0.627)	(0.587)	(0.432)
Foreign investment (*FORFIR*) (+)	0.7109	0.8570	0.1842
	(0.641)	(0.653)	(0.545)
Shareholding by the federal government (*FEDGOV*) (+)	-0.6963	0.1302	-0.2512
	(0.550)	(0.566)	(0.574)
Shareholding by the regional and local governments (*REGGOV*) (-)	0.4892	-0.0276	0.3304
	(0.768)	(0.576)	(0.622)
Affiliation with a business group (*GROFIR*) (+)	1.1583 **	0.7966 **	0.4975
	(0.458)	(0.366)	(0.364)
Establishment of an open joint-stock company (*OPECOM*) (-)	0.5977	-0.3359	-0.0204
	(0.472)	(0.354)	(0.318)
Privatization of a state-owned or municipal enterprise (*PRICOM*) (+)	-0.9391	-0.1187	-0.4158
	(0.673)	(0.573)	(0.480)
Separation from a state-owned or privatized enterprise (*SPIOFF*) (+)	0.0352	1.3461 **	0.1218
	(0.860)	(0.687)	(0.612)
Company size (*COMSIZ*) (+)	0.6713 **	0.2434	-0.2943
	(0.273)	(0.216)	(0.209)
Extent of business diversification (*BUSLIN*) (+)	-0.2157 **	-0.0512	-0.0845
	(0.108)	(0.091)	(0.089)
Reliance on market financing (*MARFIN*) (+)	1.9884 ***	-1.0539	1.4884 *
	(0.744)	(1.547)	(0.774)
Use of bank credits (*BANCRE*) (+)	-0.3539 *	-0.0599	-0.2655 **
	(0.194)	(0.128)	(0.119)
Past financial performance (*ROAAVE*) (-)	-0.0709	0.2805	-0.0856
	(0.265)	(0.189)	(0.152)
Degree of business internationalization (*EXPSHA*) (+)	0.1323	-0.0355	-0.0227
	(0.227)	(0.222)	(0.158)
Size of the audit committee (*AUDSIZ*) (+)	0.4945	0.0527	-0.9431
	(0.618)	(0.612)	(0.594)
Demand for consulting services (*CONSUL*) (?)	-0.0699	-0.0489	-0.1357
	(0.269)	(0.229)	(0.191)
Distance from the capital region (*DISCAP*) (-)	-0.2093	-0.3992 **	-0.0527
	(0.157)	(0.191)	(0.115)
Location in Moscow or Saint Petersburg (*CAPITAL*) (-)	0.1141	-36.9535 ***	0.2412
	(0.922)	(1.185)	(0.641)
Const.	-5.0376 **	-0.9751	2.1740
	(2.515)	(2.086)	(1.775)
Industry dummies	Yes	Yes	Yes
N		406	
Pseudo R^2		0.31	
Log likelihood		-347.79	
Wald test (χ^2)		18406.20 ***	

This table reports the Logit estimation result of the multiple-choice model of the audit system. The samples are Russian joint-stock companies that participated in a Japan-Russia joint enterprise survey conducted in 2005. In this model, a company choosing the D-type audit system of Figure 4 is designated as the base category, and companies belonging to the A-, B-, and C-types are designated as the first, second, and third category, respectively. For details of the estimation methodology, see Subsection 5.2.4 of the paper. Table 5 provides the definitions of the independent variables. The predicted signs are indicated in parentheses following the abbreviation of the independent variables. Standard errors are computed using White's heteroskedasticity-consistent estimator and given in parentheses beneath the regression coefficients. The Wald test tests the null hypothesis in which all coefficients are zero. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.