Corporate Form, Institutional Complementarity, and Organizational Behavior: Open versus Closed Joint-Stock Companies in Russia

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Abstract The vast majority of Russian corporations are still compelled to become closed joint-stock companies that lack a modern fundraising mechanism in order to attract capital from a wide range of private investors. This is due to factors such as significant insider ownership, a strong orientation among managers toward closed organizations, slumping needs for corporate finance, and underdeveloped local financial institutions. The impact of ownership structure on the choice of corporate form exists, even if we assume that the two elements are determined endogenously. Under these circumstances, however, a significant number of closed companies attempt to develop more open internal organizational structures that are virtually the same as those of open companies. Nonetheless, an institutional coupling of a closed corporate form and an open internal organizational structure is far from effective in resolving the serious in-house problems facing Russian firms, such as the prevention of infighting among executives and shareholders and the implementation of discipline among top management.

1 Introduction

One of the most distinguishing features of the Russian corporate sector is the preponderance of closed joint-stock companies (JSCs) over open JSCs. According to unpublished official statistics, as of January 1, 2005, there were only 58,400 open JSCs registered in Russia, compared with as many as 389,200 closed JSCs. Regarding large-scale companies that require raising funds from outside sources, the number of open JSCs exceeds that of closed JSCs, with the latter number still being fairly significant. In fact, a survey conducted in 2003 by the Federal State Statistics Service found that, of the 32,266 JSCs surveyed, excluding micro- and

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small enterprises, 19,407 were open companies, and the remaining 12,859 were closed ones (Federal State Statistical Service 2004). In other words, 4 of every 10 medium-sized and large Russian corporations were operating under a governance mechanism that put rigorous restrictions on the liquidity of their own shares.

In Russia, both open and closed JSCs are statutory legal forms of incorporation, as defined in the Federal Law on Joint-Stock Companies (hereinafter, the Law on JSCs). As we will later detail, these two corporate forms refer to the legal names of the two types of JSCs that are decisively different from each other in terms of share transferability to a third party. All JSCs established in Russia must choose either of the two company types as their statutory organizational form. There are clear distinctions between closed and open JSCs in terms of not only the restrictions on the number of shareholders but also the modes of securities issuance, the required levels of minimum capital, and disclosure obligations. From this viewpoint, Russia has an extremely unique legal framework in comparison with the developed economies. Moreover, as reported above, even though almost all of the Russian leading companies are former state-owned firms, about 40 % of them are still operated as closed JSCs after more than 10 years of mass privatization. This highlights the sharp contrast with the situation of closed corporations in the United Kingdom and the United States, most of which are family-run or privately held companies.

Inspired by the economic theory on internal organization that has been developed from suggestions made by Coase (1937), a large number of empirical studies have been conducted with regard to the determinants of organizational choice and the relationship between organizational form and behavior, including corporate performance. Surprisingly, however, except for a valuable case study by Karpoff and Rice (1989), there is little empirical work investigating organizational choices by JSCs and their possible impacts on corporate governance and firm performance. Thus, the corporate forms of Russian JSCs are an important research subject to be explored from the viewpoint of the study of law and economics as well as organizational economics.

Furthermore, this topic is of great significance in understanding the Russian economic system. It is quite possible that the high degree of orientation toward closed organization in the Russian business sector is deeply rooted in its poor corporate governance practices and investment behavior, which remains inactive regardless of significant economic recovery in recent years. In other words, it is highly likely that there are severe agency problems within these Russian closed companies that prevent the enhancement of their corporate value. In order to redress this situation, it is critical to empirically examine what factors drive many Russian firms to choose to become closed companies and how much harm is done to corporate management and maximization of shareholder wealth by this choice. Therefore, particular attention should also be given to research on the legal forms of incorporation of JSCs in the context of Russian economic studies.

In this chapter, we deal with this significant but yet-to-be explored issue on the basis of a large-scale enterprise survey. The survey was conducted in 2005 within the framework of a Japan-Russia joint research project. It covers 822 manufacturing

and communications firms located throughout the Russian Federation. All samples were JSCs, and the average number of workers per company was 1,884 (standard deviation: 5,570; median: 465). Regarding the regional and sectoral composition of the surveyed firms, they formed a representative sample of large and medium-sized Russian firms. As for their corporate form, open and closed JSCs account for 67.3 % (553 firms) and 32.7 % (269 firms) of the 822 surveyed firms, respectively, and this composition corresponds closely to the results of the 2003 survey by the Russian statistical office mentioned above.[1]

Relying upon the results of the joint survey, we first examine a variety of factors as to why Russian firms elect to become closed JSCs. In the latter part of this chapter, we examine the relationship between the corporate forms and the internal organizational structures in addition to the impact of these institutional couplings on organizational behavior, including firm performance. Through these research steps, we intend to provide new perspectives on the relationship between corporate forms and organizational behavior.

The remainder of the chapter is organized as follows: Section 2 looks into the legal framework regulating the corporate forms of Russian JSCs as well as its significance in the context of corporate management. Section 3 examines the determinants of corporate form choice between open and closed JSCs. Section 4 focuses on the institutional complementarity of corporate forms and internal organizational structures. Section 5 empirically assesses the impact of the institutional equilibrium of a corporate organization on corporate governance and firm performance. Section 6 concludes.

2 Corporate Forms of Joint-Stock Companies in Russia: Institutional Framework and Its Significance for Company Management

As reported in the Introduction, an investor who intends to establish a joint-stock company in Russia must choose to make it either an open JSC or a closed JSC as required by the provisions of Russian corporate law,[2] which provides for statutory

[1] The closed JSCs covered by the joint survey include four workers' joint-stock companies (people's enterprises). Because the workers' JSCs are run under a system that is substantially different from that of standard closed JSCs (Iwasaki 2007a), we have excluded all workers' JSCs from the observations when they are inappropriate to include in empirical analysis. See Dolgopyatova et al. (2009, Appendix) for more detailed information on the joint survey. Other research outcomes based on the same dataset used in this chapter include: Abe and Iwasaki (2010) and Iwasaki (2008, 2011, 2013a, b).

[2] These provisions refer to the Civil Code, Part I, Chap. 4, Articles 96 to 104, and to the Law on JSCs. This section was written taking into account the laws and regulations that were effective in Russia during the period in which the enterprise survey was conducted and which was used as the base material for this empirical study.

distinctions between these two types of corporate forms in the following six areas: (a) share transferability, (b) method for issuing securities, (c) required minimum capitalization, (d) number of shareholders, (e) government funding, and (f) disclosure obligations (Table 1).

First, a shareholder of an open JSC may freely transfer his/her shares to any third party other than another shareholder of the company or the company itself; on the other hand, a shareholder of a closed JSC must sell his/her shares first to another shareholder of the company or the company itself due to the right of preferential purchase. Specifically, a shareholder of a closed JSC who intends to transfer his/her shares to a third party must, at his/her own expense, notify all other shareholders of the company and its executives in writing concerning the selling price of the shares by the selling shareholder as well as other terms and conditions included in an agreement between the seller and the purchasing third party. This is done in order to confirm whether any of the other shareholders of the company or the company itself wishes to execute its right of preferential purchase. This obligation enables a closed JSC and its shareholders to detect in advance every action by any shareholder seeking to transfer his/her shares to a third party and to allow the other shareholders to effectively prevent a stock drain to outside parties by bearing the necessary expenses to purchase these shares.

Second, unlike open JSCs, whose shares issued at the time of formation may be allocated to the company founders and to the general public (i.e., establishment with outside offering), closed JSCs are only required to issue shares to their founders and to other investors specified in advance. Even after incorporation, closed JSCs are not allowed to offer new shares to the general public, although they may issue corporate bonds other than convertible bonds on the securities market as a means of raising funds from outside sources.

Third, the minimum capitalization (share capital) for open JSCs needs to be at least 1,000 times the statutory minimum wage at the time of their registration, while closed JSCs are required to secure only 100 times the statutory minimum wage. For example, the effective statutory minimum wage for the period from January to August 2005 was 720 rubles (about USD25) monthly.[3] Therefore, there is a difference of 648,000 rubles (about USD23,000) between these two legal forms of JSCs established during this period with respect to their minimum share capital as required by the Law on JSCs, not a trivial difference for small and venture businesses seeking incorporation.

Fourth, closed JSCs may not have more than 50 shareholders. If the number of shareholders exceeds this limit, they must reduce it to 50 or fewer, turn the firm into an open JSC, or dissolve within a period of one year. However, this regulation does not apply to closed companies established by the end of 1995, before the enforcement of the current Law on JSCs. A large number of closed JSCs still have 50 or more shareholders, because many of these companies are either former state-owned enterprises or ex-municipal companies that were privatized in the process of the

[3] Refer to Article 1 of the amended Federal Law on Minimum Wages of December 29, 2004.

Table 1 Differences in the legal framework between open and closed joint-stock companies in Russia

	Open JSC	Closed JSC
Share transferability	No restrictions are imposed on share transfers. No preferred purchase rights may be arranged for any shareholders, including the company, with regard to the transfer of shares to third parties (Art. 7(2)).	The company shareholders have the right to purchase the shares of other shareholders in preference to third parties. The company may only exercise such a preferred purchase right when no shareholder elects to do so (Art. 7(3)).
Share subscription	Open JSCs are incorporated by having all of their shares subscribed by their promoters or by having some of their shares subscribed by their promoters and the remaining shares subscribed by other investors (Art. 7(2)). After incorporation, they can make a public share placement without any restriction (Art. 39(1); Art. 39(2)).	Closed JSCs are incorporated only by having all of their shares subscribed by their promoters. All of their shares issued after incorporation must be offered only to their promoters or persons specified in advance (Art. 7(3); Art. 39(2)).
Issuance of company bonds	Open JSCs may issue any kind of bonds (including convertible bonds) to the public in accordance with the procedures set by law (Art. 39(2)).	Closed JSCs are prohibited from issuing convertible bonds to the public (Art. 39(2)).
Statutory minimum capitalization requirement	1,000 times the minimum statutory wage on the date of registration (Art. 26)	100 times the minimum statutory wage on the date of registration (Art. 26)
Number of shareholders	No upper limit is placed on the number of shareholders (Art. 7(2)).	The upper limit on the number of shareholders is 50 (Art. 7(3)). However, this limit does not apply to closed JSCs established by the end of 1995 (Art. 94(4)).
State involvement in investment	In principle, the state may not become the promoter of a joint-stock company (Art. 10(1)). However, state agencies may become the promoters of open JSCs in certain cases as provided for by law (Art. 7(4)).	Only former state-owned enterprises and other former municipal enterprises may become promoters of closed JSCs (Art. 7(4)).
Disclosure requirements	Open JSCs are required to disclose certain information as requested by the Law on JSCs and other statutes and by government agencies (Art. 92(1)).	Closed JSCs that issue bonds or securities at the same price and in the same manner as instructed by the Federal Financial Markets Service (FFMS) are required to disclose certain information in accordance with the rules adopted by the FFMS (Art. 92(2)).

Note: This table shows the differences between legal frameworks of open and closed joint-stock companies according to the Civil Code and the Federal Law on Joint-Stock Companies of the Russian Federation, which were effective in 2005.

mass-privatization policy in the early 1990s or affiliates of private firms and brand-new companies opened in those days.

Fifth, no state authority, including a local government, can be the founder of a JSC in principle. In addition, even when a JSC is established by a government or state organization using a company separation package in which the newly established joint company inherits the assets of the government or state organization, that newly established company must be an open JSC. However, this regulation does not apply to cases in which a corporation is established by a government or state agency as a result of its separation from a privatized firm. This is one of the reasons there are still many closed JSCs whose shares are held by the state.

Lastly, open JSCs are obliged to disclose information such as annual business reports, financial statements, asset securities reports, and other materials required by statute or requested by the Federal Financial Markets Service (FFMS) and other government authorities. On the other hand, closed JSCs are not subject to such disclosure requirements except in cases in which they issue bonds and other securities using the schemes and prices specified by financial authorities.

The results of the Japan-Russia joint enterprise survey, in which company executives were asked to explain how they perceived the significance of the aforesaid legal framework in the context of their corporate management as well as to indicate the most important reason for them to keep their company in the current corporate form, revealed that many of the respondents recognized that the choice between an open and a closed JSC had a considerable impact on their management strategies. Of 793 firms that provided valid responses to the survey, 602 (75.9 %) replied that their corporate form choice would or might affect their business development; this is far more than the 191 (24.1 %) who answered that there was no connection between these two factors. The difference between the group of open JSCs and the group of closed JSCs covered in the survey regarding the proportion of firms that confirmed a connection between their organizational choice and their business development is statistically significant at the 10 % level ($\chi^2 = 3.209, p = 0.073$), but in actuality, it was quite small (77.8 % vs. 72.0 %). Of the 602 firms that said their performance was influenced by their corporate form, 518 (86.0 %) perceived such an influence to be positive for their business growth, many more than the 84 firms (14.0 %) that regarded it as negative. The difference between the group of open JSCs and the group of closed JSCs regarding the number of firms that positively perceived such an influence on their performance was very small (85.7 % vs. 86.7 %) and not statistically significant ($\chi^2 = 0.098, p = 0.754$). Regardless of the difference in the corporate form of their companies, a great number of corporate executives see a close relationship between their organizational choice and business activities.

Table 2 summarizes the answers given by company managers to the question about the comparative advantages of each of the two corporate form options. Of the enterprises reporting that open JSCs were institutionally superior to closed JSCs, many of them answered that open JSCs were better than closed JSCs at building a reliable relationship with investors and partners (235 out of 753 firms) or at raising funds from outside financial sources (160 out of 753 firms). This number is greater

Table 2 Comparative advantages of open and closed companies over an alternative corporate form of joint-stock company

	All companies		Open JSCs		Closed JSCs	
	No. of affirmative respondents	Share (%)	No. of affirmative respondents	Share (%)	No. of affirmative respondents	Share (%)
(a) Advantages of open JSCs over closed JSCs[a]						
Company transparency can be emphasized to business partners and investors.	235	31.2	202	38.3	33	14.6
Corporate governance can be improved.	85	11.3	60	11.4	25	11.1
Better access to financial markets and increased ability to attract potential investors	160	21.2	97	18.4	63	27.9
Shareholders may sell stocks freely.	96	12.7	67	12.7	29	12.8
Others	2	0.3	2	0.4	0	0.0
There is no comparative advantage.	175	23.2	99	18.8	76	33.6
Total	753	100.0	527	100.0	226	100.0
(b) Advantages of closed JSCs over open JSCs[b]						
Managers can effectively control companies.	60	8.4	30	6.5	30	12.0
Very strict regulations imposed by the state on open joint-stock companies can be avoided.	131	18.3	92	19.8	39	15.6
The transfer of stock to outsiders can be prevented, and companies are protected from hostile takeover.	350	49.0	218	47.0	132	52.8
Even a small-scale enterprise could be set up as joint-stock company.	43	6.0	29	6.3	14	5.6
Others	0	0.0	0	0.0	0	0.0
There is no comparative advantage.	130	18.2	95	20.5	35	14.0
Total	714	100.0	464	100.0	250	100.0

Note: This table shows the results of the answers from company managers participating in the joint enterprise survey to a question about the comparative advantages of open and closed JSCs over an alternative corporate form. Closed JSCs include four workers' joint-stock companies (people's enterprises).

[a]Test for the equality of the composition of the responding firms by corporate form that gave a positive answer to each item: $\chi^2 = 51.079$ ($p = 0.000$).

[b]Test for the equality of the composition of the responding firms by corporate form that gave a positive answer to each item: $\chi^2 = 12.480$ ($p = 0.014$).

than the number of firms reporting that an organizational advantage of open JSCs is the flexibility of share transfers, which reflects their current focus (96 out of 753 firms). A substantial and statistically significant difference is evident between the open and closed JSCs in the breakdown of their answers to this question. Compared with the respondents of open JSCs, those of closed JSCs pay more attention to the fact that open JSCs enjoy good fundraising capabilities. At the same time, however, many managers of closed JSCs do not see any advantage in the corporate form of open JSCs. As for closed JSCs, most executives, regardless of whether they are working for closed or open JSCs, agree that closed companies can more effectively prevent their firms from transferring stocks to outsiders (350 out of 714 firms) and avoid the threat of hostile takeovers (131 out of 714 firms). There is statistically significant, but no remarkable difference between the two company groups in the breakdown of their answers to the above question.

Table 3 contains the results of the answers of our respondents to the question of what was the most important reason for their companies' maintaining their current corporate form. Compared with 11.8 % (93 out of 791 firms), who identified it as being related to legal restrictions concerning the number of shareholders and the minimum required capital, 75.5 % replied that it was because of the mass-privatization policy in the early 1990s or because of a management decision made on their own or by their shareholders. The fact that 54.4 % of the open JSCs reported that they had become open JSCs due to the mass-privatization policy is quite understandable, given that the federal government had strongly encouraged soon-to-be-privatized enterprises to become open JSCs by facilitating a swap between privatization vouchers distributed to the general public free of charge and the shares of state-owned and municipal enterprises. On the other hand, in consideration of the fact that managers are still the dominant shareholders in many Russian firms and in light of the strong orientation of these company insiders toward organizational closedness, it is reasonable for them to favor a closed JSC as the legal form of incorporation for their company due to the uncertain social environment typical of a period of transition.

3 Determinants of Corporate Form Choice

In Russia, the growing trend toward a market economy and its integration into the global economy is forcing domestic firms to tackle the issue of optimal adaptation to ever-changing business environments. Hence, it is common for Russian firms to make a major change in their company profile, including their form of incorporation. For instance, companies change from limited to joint-stock stature and *vice versa* much more frequently than they do in Western countries. Needless to say, transformations from open JSCs to closed JSCs and *vice versa* take place all the time, although the latter can only take place by amending the company charter through a special resolution at a general shareholders' meeting and then officially registering such an amendment.

Table 3 Most important reason for being in the current corporate form

	All companies		Open JSCs		Closed JSCs[a]	
	No. of affirmative respondents	Share (%)	No. of affirmative respondents	Share (%)	No. of affirmative respondents	Share (%)
Legal restrictions on the number of shareholders, minimum required capitalization (minimum share capital)	93	11.8	58	10.8	35	13.7
Mass-privatization policy for state-owned enterprises	349	44.1	291	54.4	58	22.7
Judgment by the managers and shareholders	248	31.4	133	24.9	115	44.9
Lack of consensus among managers and shareholders	7	0.9	3	0.6	4	1.6
Time and cost of changing the corporate form	21	2.7	10	1.9	11	4.3
Others	73	9.2	40	7.5	33	12.9
Total	791	100.0	535	100.0	256	100.0

Note: This table shows the results of the answers from company managers participating in the joint enterprise survey to the question of what was the most important reason for their companies having the current corporate form. Closed JSCs include four workers' joint-stock companies (people's enterprises).

[a]Test for the equality of the composition of the responding firms by corporate form that gave a positive answer to each item: $\chi^2 = 74.240$ ($p = 0.000$)

The law on JSCs stipulates that the amendment of a company charter must be made through a special resolution passed by a majority of at least three-fourths of the votes cast by the shareholders with voting shares in attendance. Nevertheless, this provision is not a serious obstacle to such amendments. This is due to the fact that, in many Russian companies, a small number of shareholders own a significant amount of the total shares, which means that, for the top management and major shareholders of Russian JSCs, the issue of whether their firms should be open or closed JSCs is just an "operational" variable, even after their establishment.

The discussion in the previous section highlights the differences between open and closed JSCs as a corporate form option available in Russia and the significance of these two corporate forms from the viewpoint of corporate management as well as the impact of the mass-privatization policy on the decision-making process of stock-issuing companies with respect to whether they should be open or closed JSCs. Based on these fact findings, the next three subsections theoretically consider and empirically analyze the determinants of corporate form choice by Russian firms.

3.1 Hypothesis Development

Basing on the arguments and survey results reported in Sect. 2, we expect that the differences between the institutional settings of open and closed JSCs would affect

the incentives and decision-making processes of management executives and shareholders with respect to their choice of corporate form through the following three mechanisms.

The first mechanism is the asset effect of restrictions on share transfers. Any restrictions imposed on a closed company's share transfers will undermine the liquidity and value of such shares as financial commodities. Furthermore, as explained in Sect. 2, a shareholder of a closed JSC intending to transfer his/her shares to a third party must bear all the costs needed to confirm whether any of the other shareholders in the closed JSC or the company itself wishes to execute their right of preferential purchase. Therefore, those who invest money mainly to gain a capital return on their investment (i.e., portfolio investors) will buy the shares of open JSCs rather than those of closed JSCs, *ceteris paribus*. By the same logic, company managers would prefer the corporate form of an open company from the standpoint of issuing securities to raise funds from outside sources, since a closed company must pay for all the marginal capital costs equal to the transaction costs for the transfer of its own shares to a third party and the cost of a low liquidity premium on its own shares. Closed JSCs are further placed at a disadvantage over open JSCs due to the ban on issuing any convertible bonds. Furthermore, as indicated in Table 2, choosing to adopt the open company as its legal form of incorporation will increase the transparency of a firm's management, making it easier for the firm to receive loans from banks and other financial institutions. Considering these conditions, we hypothesize that:

H_1: *The higher a firm's fundraising demand, the more likely it is to be operated as an open JSC.*

The second mechanism is the governance effect of share transfer restrictions. Tight restrictions imposed on a closed JSC as to the transfer of its shares significantly decrease the possibility of a change in its internal control or ownership that might otherwise come about due to an "exit" from the company of its shares sold, a tender offer, a proxy fight, or a bankruptcy. Such restrictions pose a serious impediment to achieving effective management discipline and to reshuffling of a management team with poor performance. Therefore, from the standpoint of which corporate form has a relatively better corporate governance mechanism, shareholders are more inclined to invest in open JSCs. On the other hand, as illustrated in the previous section, the understanding by company executives that the biggest advantage of a closed company lies in the protection against outside environments suggests that they have a strong inclination toward managerial entrenchment that enables them to eliminate supervision and intervention from outside as much as possible and to avoid external discipline. Accordingly, we predict that corporate managers who wish to retain their managerial discretion to behave in an opportunistic way or who wish to avoid the risk of hostile takeover will choose to establish and maintain their firms as closed-stock companies.

The third mechanism is the information effect of state disclosure regulations. The disclosure obligation imposed only on open JSCs by the state produces the effect of alleviating the information asymmetry between company managers and

investors in favor of the latter. This, in turn, causes more shareholders to invest in open JSCs, which have a better governance system than closed JSCs, and more managers to operate their firms as closed companies. The discussions on both the second and the third mechanisms as to the organizational choice of a corporate form can be summarized in the following hypothesis:

H_2: *The influence of non-managerial shareholders increases the possibility of firms becoming open JSCs, while the influence of managers increases the possibility of firms becoming closed JSCs.*

In addition to the three mechanisms above, it is necessary to focus on the widespread existence of business groups (i.e., financial-industrial groups or holding companies) as a factor having a significant impact on the organizational choices between open and closed JSCs in Russia. In fact, the joint survey revealed that 35.7 % of the manufacturing companies (268 of 751 firms) and 77.5 % of the communications companies (55 of 71 firms) are controlled by certain business groups through stock ownership. A company's participation in a business group is effective in protecting it from outside threats, especially intervention into company management by state administrations and public bureaucrats, which is a serious problem for Russian firms. This is due to the countervailing political power of the business group the company belongs to and the corrective cohesion among member firms (Iwasaki and Suzuki 2007). As a result, the organizational advantages of a closed JSC as an "institutional defense barrier" may become less important for managers of group companies. Furthermore, it is undesirable for management of a holding company or a core company of a business group to impose severe restrictions on the transfer of shares by its controlling companies, not only from the standpoint of a large shareholder of the group firms, but also from that of the group's goal of ensuring effective asset management within the group. Therefore, we assume that:

H_3: *A firm's affiliation with a business group increases the possibility of the firm being operated as an open JSC.*

However, with the hierarchy within such business groups expanding, enterprises in the lower echelons are more likely to be established by their hierarchically upper companies as wholly owned subsidiaries or dummy firms for account-rigging or tax-evasion purposes, and these enterprises are usually closed companies bound by less strict disclosure obligations. Consequently, we also predict that:

H_4: *The organizational scale of a business group is positively correlated with the proportion of closed JSCs in the member firms of that group.*

Lastly, as explained above, taking into account the background of Russia's privatization policy and its legal restrictions on state investment, the past policies on company start-ups may have a historical, path-dependent impact on organizational choices between open and closed JSCs. Hence, we hypothesize that:

H_5: *Privatized enterprises and companies separated from state-owned or municipal companies or former state-owned, now privatized, companies are more likely to choose to operate as open JSCs in comparison with private companies newly established after the fall of the communist regime*.

3.2 Empirical Methodology

Next, to empirically examine the testable hypotheses presented in Sect. 3.1, we estimate discrete choice models that take a value of 1 for closed JSCs as the dependent variable (*CLOCOM*) using a probit maximum likelihood estimator. On the right-hand side of the regression models, we introduce (a) ownership variables representing the influence of shareholders and managers over organizational strategies, (b) variables concerning the constraints affecting capital demand and supply of the company, (c) variables regarding the linkage between a company with a business group and the organizational scale of that group, (d) variables concerning the impact of past policies on company start-ups, and (e) other control variables. The detailed variable definitions are as follows.

The variables of outside ownership utilized in our estimation are the 6-point-scale ownership share of non-managerial shareholders, excluding domestic individuals (*OWNOUT*),[4] and the ownership share of the state (*OWNSTA*) and private shareholders (*OWNPRI*), each of which is further classified into the federal government (*OWNFED*), regional and local governments (*OWNREG*), commercial banks (*OWNBAN*), investment funds and other financial institutions (*OWNFIN*), non-financial corporate shareholders (*OWNCOR*), and foreign investors (*OWNFOR*). As for company managers, we use a large management shareholder dummy (*MANSHA*) that assigns a value of 1 if a company has a specific manager or a specific managerial group as its large shareholder.

As a proxy for a company's capital demand, a securities-issuing planning variable (*SECPLA*) is used. If the company has a plan to issue securities in Russia in the near future, this variable takes a value of 1, whereas if the company has a plan to issue shares and bonds in foreign financial markets, where more stringent rules than those in Russia are enforced with respect to organizational management and disclosure, it is assigned a value of 2. If neither of these two conditions applies, it is assigned a value of 0. A relationship-banking dummy (*RELBAN*) is used for companies with a long-term credit relationship with a certain commercial bank. On the other hand, as a proxy for representing the constraints affecting the capital procurement of a company, the number of financial institutions per 1,000

[4] The ownership share of domestic individual shareholders is completely excluded from *OWNOUT*. This is to eliminate the ownership effects from the management executives' family members, relatives, or friends as well as those of the employees, all of whom are formally categorized as outside shareholders.

non-financial corporations in a federal district where the company is located (*NUMFIN*) is introduced because, except in a few big cities, local commercial banks and investment firms play a critical role in the field of investment financing and financial consulting services for the local corporate sector, and the development of these local financial institutions is an overriding factor affecting the fundraising abilities of local companies.

In order to examine how affiliation with a business group affects the choice of corporate form, we introduce a group firm dummy variable (*GROFIR*) with a value of 1 if the company is a member of a holding company or another business group through stock ownership. We also use a core group firm dummy (*GROCOR*) and an affiliate firm dummy (*GROAFF*) to test a possible asymmetric impact of the company's group membership on the two. The organizational size of the business group is represented by the natural logarithm of the total number of its member firms (*GROSIZ*).

The impact of past policies on company start-ups is assessed using two dummy variables from the standpoint of the importance of the mass-privatization policy and the statutory regulations on investments by state agencies. Namely, *PRICOM* is a dummy variable for former state-owned (ex-municipal), now privatized, companies; *SPIOFF* captures firms spun off from state-owned (municipal) enterprises or privatized companies by a value of 1.[5] The control variables include the natural logarithm of the total number of employees representing the company size (*COMSIZ*) and industry dummy variables to control the fixed effects in each industry that are unobservable for econometricians.

In accordance with our theoretical predictions in Sect. 3.1, we expect that the ownership by non-managerial shareholders represented in *OWNOUT* and other variables is negatively correlated with the choice of a closed JSC. The sign of *MANSHA* cannot be specified at this stage, as it varies depending on which element is more powerful: the marginal assessment value of shares owned by a manager or group of managers or the additional benefits the manager obtains by operating a closed company. All three variables concerning capital demand and supply (*SECPLA*, *RELBAN*, and *NUMFIN*) are expected to be negative. The three dummy variables representing a company's participation in a business group (*GROFIR*, *GROCOR*, and *GROAFF*) would be negatively correlated with the choice of a closed JSC, whereas *GROSIZ* would have a positive sign. *PRICOM* and *SPIOFF* would be negative. *COMSIZ* is also expected to be estimated with a negative sign because the larger the size of a company is, the more shareholders and capital the company has, and the requirements for choosing the corporate form of an open JSC are thus gradually fulfilled.

Table 4 compares open and closed JSCs using the above independent variables. As this table shows, open JSCs, regardless of their type, have a higher average outside ownership than closed JSCs, and the difference between the two forms of

[5] Newly established private firms after the collapse of the Soviet Union are treated as the default category in our estimation.

Table 4 Comparison between open and closed joint-stock companies regarding the ownership structure, capital demand and supply constraints, relationship with business groups, past policies on company start-ups, and company size

	Open JSCs			Closed JSCs		
	N	Mean/ proportion	Median	N	Mean/ proportion[a]	Median[b]
Outsider ownership share (*OWNOUT*)	448	2.21	2.00	223	1.18***	0.00$^{\#\#\#}$
State ownership share (*OWNSTA*)	473	0.66	0.00	236	0.12***	0.00$^{\#\#\#}$
Federal government agencies (*OWNFED*)	480	0.49	0.00	238	0.09***	0.00$^{\#\#\#}$
Regional and local government agencies (*OWNREG*)	478	0.23	0.00	237	0.05***	0.00$^{\#\#\#}$
Private ownership share (*OWNPRI*)	449	1.72	0.00	223	1.06***	0.00$^{\#\#\#}$
Commercial banks (*OWNBAN*)	470	0.19	0.00	231	0.07**	0.00$^{\#\#\#}$
Investment funds and other financial institutions (*OWNFIN*)	465	0.31	0.00	233	0.09***	0.00$^{\#\#\#}$
Non-financial corporations (*OWNCOR*)	463	1.06	0.00	237	0.69***	0.00$^{\#\#\#}$
Foreign investors (*OWNFOR*)	469	0.37	0.00	234	0.31	0.00$^{\#\#}$
Proportion of firms with a large managerial shareholder (shareholder group) (*MANSHA*)	527	0.43	0.00	255	0.58†††	1.00$^{\#\#\#}$
Proportion of firms planning to issue securities in the near future (*SECPLA*)	449	0.12	0.00	256	0.08	0.00
Proportion of firms with a long-term credit relationship with a certain commercial bank (*RELBAN*)	529	0.85	1.00	256	0.76†††	1.00$^{\#\#\#}$
Proportion of member companies of a business group (*GROFIR*)	553	0.41	0.00	269	0.36	0.00
Proportion of core corporations of a business group (*GROCOR*)	553	0.05	0.00	269	0.06	0.00
Proportion of affiliated companies of a business group (*GROAFF*)	553	0.35	0.00	269	0.31	0.00
Total number of member companies of a business group to which a company belongs (*GROSIZ*)	536	7.67	0.00	261	9.98	0.00
Proportion of former state-owned or ex-municipal privatized firms (*PRICOM*)	553	0.78	1.00	269	0.51†††	1.00$^{\#\#\#}$
Proportion of firms that separated from a state or privatized company (*SPIOFF*)	553	0.09	0.00	269	0.11	0.00
Average number of employees (*COMSIZ*)	553	2414.77	600.00	269	794.19***	300.00$^{\#\#\#}$

Note: This table shows results from the univariate comparison of open and closed JSCs based on the results of the joint enterprise survey. Workers' joint-stock companies (people's enterprises) are excluded from observations. "Ownership share" means an ownership share rated on the following 6-point scale: 0: 0 %; 1: 10.0 % or less; 2: 10.1–25.0 %; 3: 25.1–50.0 %; 4: 50.1–75.0 %; 5: 75.1–100.0 %. *OWNOUT* and *OWNPRI* exclude ownership by domestic individual shareholders. *MANSHA*, *SECPLA*, *RELBAN*, *GROFIR*, *GROCOR*, *GROAFF*, *PRICOM*, and *SPIOFF* are dichotomous variables, which take a value of 1 to corresponding firms. The Appendix provides detailed variable definitions.

[a] ***The difference of the means in comparison with open JSCs is significant at the 1 % level according to the *t*-test (the Welch test was performed instead of the *t*-test when the null-hypothesis that the two samples have the same population variance was rejected by *F*-test for homoskedasticity); **at the 5 % level; †††the difference of the proportions in comparison with open JSCs is significant at the 1 % level according to the χ^2 test.

[b] $^{\#\#\#}$The difference in comparison with open JSCs is significant at the 1 % level according to the Wilcoxon rank-sum test; $^{\#\#}$at the 5 % level.

incorporation in this regard is statistically significant at the 5 % or less significance level for all types of non-managerial shareholders. In contrast, the percentage of companies with large management shareholding in all closed JSCs is 15 % higher than in open JSCs, and the difference between them is statistically significant at the 1 % level. Furthermore, the differences between open and closed JSCs regarding the proportion of companies having a long-term credit relationship with a specific commercial bank, the proportion of privatized firms, and the average number of employees are also statistically significant and consistent with our predictions.

The basic sample for our estimation consists of 557 observations, excluding all companies that have already issued securities in the past (Sample type I). In order to validate the robustness of the estimation results, a supplementary estimation is performed using the following three subsamples: Sample type II, which is made up of the firms included in Sample type I, excluding all communications firms; Sample type III, which excludes firms whose number of employees exceeds the mean of the number of employees of the closed JSCs ± 1 standard deviation from the basic sample set; and Sample type IV, which consists of firms with a stable ownership structure that did not experience changes in major shareholders from 2001 to 2004. An estimation using the former two subsamples focuses on the estimation bias arising from the characteristics of newly emerged telecommunications businesses and those of mega corporations. On the other hand, the estimation using Sample type IV deals with the possible endogeneity between corporate forms and ownership structures. As an alternative way to deal with the endogeneity of two factors, we also conduct a two-stage probit estimation[6] by introducing the following four variables to be utilized as additional instruments together with all exogenous variables on the right-hand side in the first stage of regression: a dummy variable of shareholding by an incumbent CEO (or president) (*CEOSHA*); a dummy variable for firms with a dominant shareholder (*DOMSHA*); the age level of the CEO or company president (*CEOAGE*); and a 3-point-scale assessment of the intensity of competition with domestic firms in a product market (*COMDOM*).[7]

To compute standard errors, we use White's heteroskedasticity-consistent estimator.

3.3 Estimation Results

Table 5 shows the estimation results. In this table, the regression coefficients represent marginal effects.

[6] The two-stage procedure would be to estimate the reduced forms for ownership variables by probit or ordered probit maximum likelihood and estimate the corporate form choice model by probit after substituting the predicted values for ownership variables.

[7] The correlation coefficients for *CLOCOM* and each of the newly introduced four variables range between -0.032 and 0.019 and are statistically insignificant.

Except for the ownership variables of financial institutions and foreign ownership, all of the independent variables for Models [1] through [4] estimated using the basic sample have the predicted signs with high statistical significance. The presence of non-managerial shareholders diminishes the probability that a firm they own will become a closed JSC. In this respect, it is noteworthy that the marginal effect of state ownership is much stronger than that of private owners. The impact of capital demand and the development of local financial institutions also reduce the probability of the choice of closed JSC as a corporate form. Companies linked with a business group through stock ownership tend to choose open JSC as their corporate form. However, the larger a business group becomes, the higher the number of closed companies that are included among its member firms. Privatized firms are more likely to be open companies, as are JSCs spun off from state-owned or municipal enterprises or from privatized companies. In addition, as the company size grows, the likelihood of the company operating as a closed JSC significantly decreases.

In contrast, the estimation result that a large management shareholder dummy (*MANSHA*) is significant and positive implies that Russian managers place far more importance on maintaining effective control of their company than on obtaining capital gains by owning stock in their companies. This result also suggests that they have a strong desire to prevent outside intervention into their company management and discipline by shareholders, even at the cost of a somewhat reduced value and lowered transferability of their own shares.[8] In other words, the inclination toward managerial entrenchment is significant among Russian managers. We conjecture that one of the most attractive reasons for Russian managers to operate their firms as closed JSCs is the variety of fringe benefits they obtain by doing so. Even at the time of the joint survey, which was 14 years after the systemic transformation to a market economy, it was highly likely that many corporate executives still held such perceptions, given the underdeveloped capital and managerial markets in Russia.

It is logical that *SECPLA* for Models [5] and [6] is slightly less significant than that for the other models, since the sample set does not include any communications companies, which represent the emerging industry in Russia, or the largest corporations that have substantial financial needs and are highly motivated to raise equity capital. It is not surprising that *GROFIR* and *GROSIZ* for Model [7] are estimated to be insignificant, considering that 46.4 % of the surveyed firms (110 of 237) that experienced a substantial change in their ownership structure from 2001 to 2004 were almost part of a business group. What is more important from the viewpoint of the statistical robustness of the estimation results is that the explanatory power and statistical significance of the ownership variables in Model [7] are almost at the same level as those of the estimates for Model [1]. In addition, the result of a

[8] This is closely associated with the fact that the sample firms used for the empirical analysis in this section, as well as the overwhelming majority of Russian companies, are unlisted and have stock prices that are not particularly sensitive to management performance, which leads to an extremely low incentive effect of stock ownership by managers.

two-stage probit estimation of Model [8] also strongly suggests that there is a statistically significant relationship between the corporate form and the ownership structure even if we assume that both of them are determined endogenously.

In summary, our empirical evidence supports that the five organizational-choice mechanisms stated in Sect. 3.1 are effectively functioning in reality. Consequently, we conclude that there are four primary economic problems that cause many JSCs to choose the corporate form of a closed company in Russia. They are (a) a concentrated insider ownership structure, (b) persistent orientation toward organizational closedness among management executives, (c) sluggish capital demand in the corporate sector, and (d) an underdeveloped regional financial sector. In contrast, corporatization through state asset privatization and the formation of business groups positively affect the choice of an open company. These findings strongly suggest that the peculiarities of the transition economy and the massive presence of closed JSCs are inseparably linked in Russia.

4 Institutional Complementarity Between the Corporate Form and the Internal Organizational Structure

Choosing which corporate form to adopt is an important step for a Russian JSC in order to determine its organizational openness and the relationship between its managers and shareholders. However, this objective is ultimately fulfilled when the company has finalized its internal organizational structure by drawing up a corporate charter and establishing the corporate bodies required by law, and so forth. This section further examines this issue by focusing on the institutional complementarity between the corporate form and the internal organizational structure.

4.1 A New Approach to Institutional Complementarity: Function-Enhancing Complementarity versus Function-Neutralizing Complementarity

A general perception by economists of the concept of institutional complementarity is represented in the following statement by Aoki (2000):

> If the institutional structure of a particular economy reflects equilibrium strategies in its underlying evolutionary game, complementarity is likely to exist between the elements of that structure. That is, *the operations of one institution will be reinforced by the existence of other institutions*. This is referred to as "institutional complementarity" [emphasis added]. (ibid., pp. 57–58)

The concept of institutional complementarity not only refers to the institutional compatibility in a particular economic system but also implies a positive assessment of the synergistic effects of different institutions functionally enhancing one

Table 5 Probit regression analysis of the corporate form choice

Dependent variable	*CLOCOM*							
Sample constraints[a]	Type I				Type II	Type III	Type IV	Type I
Model	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
OWNOUT	−0.055***			−0.056***	−0.058***	−0.058***	−0.050***	−0.169**
	(0.01)			(0.01)	(0.01)	(0.01)	(0.01)	(0.07)
OWNSTA		−0.120***						
		(0.03)						
OWNFED			−0.106***					
			(0.03)					
OWNREG			−0.143***					
			(0.04)					
OWNPRI		−0.041***						
		(0.01)						
OWNBAN			−0.023					
			(0.05)					
OWNFIN			−0.071					
			(0.04)					
OWNCOR			−0.057***					
			(0.01)					
OWNFOR			0.019					
			(0.03)					
MANSHA	0.100**	0.093**	0.099**	0.102**	0.104**	0.105**	0.110**	0.210*
	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)	(0.05)	(0.11)
SECPLA	−0.131*	−0.124*	−0.129*	−0.133**	−0.113	−0.116	−0.175*	−0.124**
	(0.07)	(0.07)	(0.07)	(0.07)	(0.08)	(0.08)	(0.10)	(0.06)
RELBAN	−0.148**	−0.153**	−0.146**	−0.149**	−0.138**	−0.158**	−0.134*	−0.143**
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)
NUMFIN	−0.188***	−0.191***	−0.194***	−0.192***	−0.164**	−0.185***	−0.142*	−0.146**

	(0.06)	(0.07)	(0.07)	(0.06)	(0.07)	(0.07)	(0.08)	(0.07)
GROFIR	−0.217**	−0.216**	−0.209**		−0.179*	−0.253***	−0.169	−0.225**
	(0.10)	(0.09)	(0.09)		(0.10)	(0.09)	(0.14)	(0.09)
GROCOR				−0.232***				
				(0.08)				
GROAFF				−0.196**				
				(0.10)				
GROSIZ	0.098**	0.088*	0.085*	0.094**	0.084*	0.115**	0.067	0.122**
	(0.05)	(0.05)	(0.04)	(0.05)	(0.05)	(0.05)	(0.07)	(0.05)
PRICOM	−0.390***	−0.383***	−0.403***	−0.394***	−0.376***	−0.388***	−0.423***	−0.392***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.06)
SPIOFF	−0.173***	−0.162**	−0.166***	−0.178***	−0.160***	−0.168**	−0.200***	−0.180***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.06)
COMSIZ	−0.062**	−0.058**	−0.060**	−0.064**	−0.049*	−0.070**	−0.068**	−0.037
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	557	555	555	557	525	534	389	527
Pseudo R^2	0.19	0.20	0.21	0.19	0.16	0.19	0.17	0.17
Log likelihood	−295.70	−290.69	−286.06	−295.44	−283.83	−284.18	−211.91	−282.43

Note: This table reports results from the regressions of the choice between open and closed JSCs on the variables reflecting the ownership structure, capital demand and supply constraints, relationship with business groups, past policies on company start-ups, and company size. Workers' joint-stock companies (people's enterprises) are excluded from observations. We estimate models that take *CLOCOM*, a qualitative variable with a value of 1 assigned to closed JSCs, as the dependent variable using a probit estimator. Model [8] endogenizes corporate form and ownership structure. *OWNOUT* and *MANSHA* are instrumented by all exogenous variables on the right-hand side and a dummy variable of shareholding by an incumbent CEO (or president) (*CEOSHA*); a dummy variable that takes a value of 1 if there is a shareholder or a shareholder group who substantially controls corporate management (*DOMSHA*); the age level of the CEO or company president (*CEOAGE*); and a 3-point-scale assessment of the intensity of competition with domestic firms in a product market (*COMDOM*). The Appendix provides detailed variable definitions. The coefficients represent marginal effects. White's heteroskedasticity-consistent standard errors are shown in parentheses.

[a]Type I: basic sample (available observations without firms that already issued securities in the past); Type II: excluding communications firms from the basic sample; Type III: excluding those with the total number of employees exceeding the mean of number of employees of closed JSCs (794.19 person) ±1 standard deviation (3,149.14) from the basic sample; Type IV: excluding those that experienced a change in major shareholders from 2001 to 2004 from the basic sample.

***Significant at the 1 % level; **at the 5 % level; *at the 10 % level.

another. Nevertheless, we emphasize that such complementarity may exist in a way that causes one institution to functionally undermine the other. This means that even if the functional level of an institution is excessive for a particular economic entity and it would be impossible to fine-tune that institution, another institution would work to inhibit the function of others in order to optimize the entire system. More specifically, if an institutional complementarity that causes institution Ψ^{+} to reinforce the function of institution Ω^{+} or causes both of these institutions to functionally enhance each other can be called a "function-enhancing complementarity" and an institutional arrangement that is established based on such institutional complementarity and represented in a matrix form as (Ω^{+}, Ψ^{+}) may be referred to as a "function-enhancing complementarity equilibrium," then an institutional complementarity that causes institution Ψ^{-} to work to offset or mitigate the function of institution Ω^{+} or causes these two institutions to functionally neutralize each other may be called a "function-neutralizing complementarity," and an institutional arrangement based on this (Ω^{+}, Ψ^{-}) may be referred to as a "function-neutralizing complementarity equilibrium."

A function-neutralizing complementarity equilibrium tends to be achieved when institution Ω^{+} is exogenous to a given economic entity or when it is still under development in its evolutional process. If institution Ω^{+} transforms into Ω^{++} with the desired functional level by becoming endogenous to a given economic entity or gaining perfection over time, it is presumed that there is also a change in institution Ψ^{-}, leading to the emergence of a new, non-function-neutralizing complementarity equilibrium expressed as (Ω^{++}, Ψ^{++}). In this sense, an institutional arrangement with function-neutralizing complementarity characteristics generates only a short-term equilibrium. As seen in the relationship between law and business, however, the wider the social hierarchy is between a particular economic entity (enterprise) and an institutional builder (legislative body) for institution Ω^{+}, the more difficult it is for the former to achieve long-term equilibrium. Therefore, a function-neutralizing complementarity equilibrium may exist for a substantial period of time in our incomplete real world, even though it is theoretically transient. With this in mind, the impact of a function-neutralizing complementarity equilibrium on the economic performance under assessment cannot be disregarded.

As is probably quite evident, this chapter provides a good opportunity for an empirical study of the two examples of institutional complementarity, making it possible to observe both the function-enhancing and function-neutralizing aspects of institutional complementarity by looking at various combinations of corporate forms and internal organizational structures. The dichotomous options of statutory corporate form enforced by the Russian corporate law, i.e., the choice between an open and a closed company, are probably not satisfactory to the JSCs, whose ownership structures and business environments are diverse because the ideal degree of organizational openness differs from company to company. In addition, it is unlikely that an enterprise can solve conflicts of interest between shareholders and company managers solely by determining its legal form of incorporation.

For instance, some investors in closed JSCs may persistently complain that the restrictions on share transferability imposed by the Law on JSCs unreasonably

increase a company's organizational closedness, which can potentially hamper effective monitoring of top management. On the other hand, some open JSC managers, fearing governmental intervention into their companies and hostile takeovers by strategic investors, may continue to feel cautious about the statutory rights of shareholders to freely transfer shares, as well as about the disclosure requirements, due to the possible risk of the company being excessively exposed to the outside environment. Of course, there also may be shareholders and managers who regard the institutional effect of the corporate form they have chosen as insufficient. These people try to affect the functional strength of their companies' corporate forms and achieve more adequate organizational openness for their own benefit by amending their corporate charters to include their original provisions on share transfers and by exercising their influence over the decision-making process to determine the composition and rules of management and supervisory bodies.

In the case described above, open (closed) JSCs are regarded to have attained a function-enhancing complementarity arrangement by coordinating the organizational openness (closedness) of their internal structures. Conversely, enterprises that chose an open (closed) JSC as their corporate form and adjusted their internal structures to have closed (open) characteristics are considered to have selected a function-neutralizing complementarity equilibrium as their institutional arrangement. By applying the above criteria to our firm-level dataset, in the next subsection, we look at the actual behavior of Russian corporations in this respect.

4.2 Institutional Arrangement of the Corporate Form and Internal Structure in Russian Firms

First of all, we need to measure the organizational openness of the internal structure as a whole of each surveyed firm. To this end, we adapt Hayashi's quantification method III for 24 qualitative variables (categorical data) collected from 553 firms, representing the characteristics of a statutory corporate structure in terms of the content of a corporate charter regarding shareholders' ownership and their voting rights, general shareholders' meetings, the board of directors, the collective executive board,[9] the audit committee (auditors), and an external auditor. This measure

[9] A collective executive board headed by the company president (the general director), which is an internal executive organization voluntarily set up by a company, "takes leadership in daily corporate management except for exclusive competence of the general shareholder meeting and the board of directors" (Article 69(2) of the Law on JSCs). In addition, Article 66(2) of that law prohibits members of a collective executive board from making up more than one quarter of the board of directors. In view of these provisions, it is assumed that the presence of a collective executive board functions to clarify management responsibilities and to enhance the independence of the board of directors from management. For more details on this management body, see Iwasaki (2007a, 2013a).

aims to obtain sample scores of the second eigenvalues that best represent the organizational openness of a company's internal structure.

The variables used in the analysis are listed in Table 6. These variables contain information about the existence of corporate charter provisions that limit the number of shares owned per shareholder or restrict shareholder voting rights as well as about the composition of its membership, frequency of meetings, and authority of management and supervisory bodies. In this table, the response rate of these variables for each corporate form is also shown. The χ^2 test of differences of proportions revealed that the difference between open and closed JSCs is statistically significant for 16 of the 24 categories. As expected, these results clearly suggest that closed JSCs generally have a more closed internal structure than open JSCs.

The sample scores calculated on the basis of the categorical quantity of the second eigenvalue listed at the far right of Table 6 are hereinafter referred to as openness scores (*OPESCO*), which are used as indices to quantify the openness of the internal organizational structure. *OPESCO* ranges from −2.910 to 2.020, and its mean (median) is −0.093 (−0.052). The mean (median) *OPESCO* for open JSCs is 0.045 (0.023), that for closed JSCs is −0.472 (−0.510), and the difference in the means between these two company groups is significant at the 1 % level ($t = 5.180$, $p = 0.000$; Wilcoxon Z = 4.896, $p = 0.000$). Obviously, there is a substantial and statistically significant difference between open and closed companies in terms of the openness of their internal structures.

The determinants of the openness of an internal structure of a company may overlap with the factors affecting its choice of corporate form discussed in Sect. 3.2. In particular, both the bargaining power of shareholders and top executives over management and the company's membership in a business group are expected to have a significant impact on the openness of an internal structure, since the mode of the internal organizational structure is directly related to how the company divides its managerial control. As we reported in Sect. 2, because the formation of an open organizational architecture enables company managers to demonstrate a more transparent management style to business partners and potential investors, a firm's demand in fundraising may be positively related to the openness of its internal structure.

To verify the above presumptions, we conduct an OLS estimation to regress *OPESCO* on the variables representing ownership share by shareholders and managers, capital demand and supply constraints, and affiliation with a business group, controlling the difference in past policies on company start-ups, company size, and industry fixed effects.[10] Table 7 shows the results. It indicates that (a) ownership by shareholders and managers adversely affects the formation of a company's internal structure; (b) affiliation with a business group increases the openness of the internal structure of its member firms against the background that

[10] The basic sample for the OLS estimation consists of 417 observations. Sample constraints are the same for the corporate form choice models described in Sect. 3.2.

Table 6 Comparison between open and closed joint-stock companies regarding their internal organizational structure

Upper categories	Lower categories	Response rate		Categorical quantity of the second eigenvalue[b]
		Open JSCs	Closed JSCs[a]	
Corporate charter restricting ownership and voting rights	Ownership limits are set by the corporate charter.	0.12	0.19**	−2.234
	Voting rights limits are set by the corporate charter.	0.16	0.19	−1.847
General shareholders meeting	General shareholders meeting has a high degree of influence over management decisions.[a]	0.79	0.87***	−0.345
Board of directors	Managerial directors constitute the majority (51 % or more) of the board of directors.	0.34	0.55***	−1.995
	Employee directors constitute the majority of the board of directors.	0.01	0.05***	−3.641
	Outsider directors, including those representing the state, constitute the majority of the board of directors.	0.58	0.33***	1.581
	Private outside directors constitute the majority of the board of directors.	0.51	0.33***	1.705
	The chairman of the board of directors is an outsider.	0.33	0.26**	0.342
	The board of directors includes a director(s) who represents non-employee minor shareholders.	0.19	0.12**	0.919
	The board of directors includes an independent director(s).	0.21	0.14**	1.307
	A board of directors' meeting is convened at least once a month.	0.46	0.34***	−0.336
	The board of directors has a high degree of influence on management decisions.[a]	0.93	0.93	−0.048
	The chairman of the board of directors has a high degree of influence on management decisions.[a]	0.84	0.83	0.076
Collective executive board	A collective executive board is in place.	0.39	0.24***	0.257
	A meeting of the collective executive board is convened at least once a month.[b]	0.83	0.72*	0.329
	The collective executive board has a high degree of influence on management decisions.[a]	0.33	0.23***	0.530

(continued)

Table 6 (continued)

Upper categories	Lower categories	Response rate		Categorical quantity of the second eigenvalue[b]
		Open JSCs	Closed JSCs[a]	
Audit committee (auditors)	Auditors representing employees and their union constitute the majority of the audit committee.	0.46	0.51	−1.553
	Outside auditors constitute the majority of the audit committee.	0.51	0.46	1.383
	The audit committee members include a professional expert(s).	0.27	0.26	1.172
	A meeting of the audit committee is convened at least once per quarter.	0.44	0.37	−0.749
	The audit committee has a high degree of influence on management decisions.[a]	0.49	0.46	−0.373
External auditors	The external auditor is a foreign incorporated audit firm.	0.10	0.05*	1.762
	A meeting between management and the external auditor is held at least once per quarter.	0.72	0.63**	−0.225
	The external auditor has a high degree of influence on management decisions.[a]	0.49	0.42*	0.182

Note: This table shows results from the univariate comparison of open and closed JSCs in terms of internal organizational structure using the results of the joint enterprise survey. Workers' joint-stock companies (people's enterprises) are excluded from observations. The data used for comparison are qualitative variables (categorical data) collected from 553 surveyed firms. The right column presents the categorical quantity of the second eigenvalue computed by Hayashi's quantification method III to measure the openness of the internal organizational structure in each sample firm. The second eigenvalue, its contribution rate, and correlation coefficient are 0.221, 15.3 %, and 0.470, respectively.

[a]Indicates firms that replied "there is a certain degree of influence" or "there is a high degree of influence".

[b]Covering only firms with a collective executive board.

***The difference in proportions when compared with open JSCs is significant at the 1 % level according to the χ^2 test; **at the 5 % level; *at the 10 % level.

the holding company and core group companies try to secure effective monitoring and corporate governance in affiliated companies; and (c) the significant and positive estimate of *RELBAN* corresponds to our assumption that constraints on capital supply and demand tend to discourage the organizational openness of a company. These results strongly indicate that many common factors have the same direction of impact both on the choice of corporate form and on the formation of the internal structure. In other words, they appear as driving forces to promote the coevolution and function-enhancing institutional arrangements of a company's legal form of incorporation and its internal organizational structure.

Table 7 OLS regression analysis of the openness of the internal organizational structure

Dependent variable	*OPESCO*			
Sample constraints[a]	Type I	Type II	Type III	Type IV
Model	[1]	[2]	[3]	[4]
Const.	0.233	0.112	0.526	0.621
	(0.38)	(0.39)	(0.44)	(0.58)
OWNOUT	0.072***	0.071***	0.071***	0.071**
	(0.03)	(0.03)	(0.02)	(0.03)
MANSHA	−0.748***	−0.750***	−0.749***	−0.641***
	(0.10)	(0.10)	(0.10)	(0.12)
SECPLA	−0.044	0.062	−0.122	−0.063
	(0.11)	(0.13)	(0.13)	(0.15)
RELBAN	0.244*	0.265*	0.266*	0.316**
	(0.13)	(0.14)	(0.14)	(0.16)
NUMFIN	−0.053	−0.074	−0.036	−0.128
	(0.15)	(0.16)	(0.15)	(0.17)
GROFIR	0.353***	0.347***	0.346***	0.505***
	(0.11)	(0.11)	(0.11)	(0.13)
PRICOM	−0.018	−0.009	−0.036	−0.218
	(0.13)	(0.13)	(0.14)	(0.16)
SPIOFF	0.001	0.004	−0.023	−0.179
	(0.19)	(0.19)	(0.20)	(0.23)
COMSIZ	−0.002	−0.022	−0.049	−0.030
	(0.05)	(0.05)	(0.06)	(0.06)
Industry dummies	Yes	Yes	Yes	Yes
N	417	396	401	284
Adjusted R^2	0.24	0.21	0.23	0.25
Breusch-Pagan test (χ^2)	29.27**	27.61**	27.67*	21.83

Note: This table reports results from the regressions of the openness of the internal organizational structure on the variables reflecting the ownership structure, capital demand and supply constraints, relationship with business groups, past policies on company start-ups, and company size. We estimate models that take *OPESCO* (the openness score of the internal organizational structure) as the dependent variable by OLS. The Appendix provides detailed variable definitions. Standard errors are shown in parentheses. White's heteroskedasticity-consistent standard errors are given when the null-hypothesis of homoskedasticity is rejected at the 5 % level by the Breusch-Pagan test.

[a]Type I: basic sample (available observations without firms that already issued securities in the past); Type II: excluding communications firms from the basic sample; Type III: excluding those with the total number of employees exceeding the mean of number of employees of closed JSCs (794.19 person) ±1 standard deviation (3,149.14) from the basic sample; Type IV: excluding those that experienced a change in the major shareholders from 2001 to 2004 from the basic sample.

***Significant at the 1% level; **at the 5% level; *at the 10% level.

Meanwhile, the following interesting fact is found by looking at *OPESCO* from a different angle. As referred to in Sect. 2, the respondents were asked whether they believed that the corporate form of their company was beneficial to the growth of their business. When comparing the *OPESCO* values for companies that answered

"beneficial" with those for companies that answered "detrimental," the sample group of open JSCs had a mean/median ratio of 0.033/0.150 (265 firms) to −0.090/0.010 (43 firms), whereas that for the sample group of closed JSCs was −0.606/−0.609 (97 firms) to 0.095/0.115 (14 firms), suggesting that JSCs whose managers have a negative view of their own corporate form are inclined to develop an internal structure with function-neutralizing characteristics. In particular, the difference between closed JSCs with a positive view and closed JSCs with a negative view is statistically quite significant ($t = 2.217$, $p = 0.029$; Wilcoxon $Z = 2.070$, $p = 0.039$).[11] In other words, closed companies that are not satisfied with their closed disposition in terms of the corporate form are much more likely to achieve function-neutralizing complementarity institutional arrangements than are open companies. This result suggests the possibility that dissatisfaction with the corporate form of a closed JSC comes from its closed organizational nature, represented by severe restrictions on share transferability imposed by the Russian corporate law.

As is clear from the above examination, the distribution of *OPESCO* for open and closed JSCs is diverse, and there is a general tendency for open companies to try to make their internal structures more open to the outside and for closed companies to act in the reverse. Hence, looking at the overall picture of the current state of Russian JSCs, their dynamic and systematic efforts to attain a function-enhancing complementarity equilibrium for their internal structures are noticeable. However, as illustrated in Fig. 1, many open JSCs have internal structures with openness levels that are the same or lower than the average internal structures in closed JSCs. At the same time, a significant number of closed JSCs have open internal structures. In fact, when categorizing the surveyed firms into companies with open internal structures and companies with closed internal structures on the basis of whether their *OPESCO* values are larger than the median of all samples, 43.3 % of the responding open JSCs (176 of 406) have closed internal structures, whereas 32.0 % of the responding closed JSCs (47 of 147) have open structures. To summarize, according to the discussions in Sect. 4.1, 4 of 10 of the surveyed firms have already achieved or are in the process of achieving a function-neutralizing complementarity equilibrium as the institutional arrangement for the internal governance system.

5 Institutional Equilibrium and Organizational Behavior

As noted in the previous section, an asymmetrical institutional arrangement between a corporate form and its internal structure is a noticeable phenomenon that divides medium- and large-scale JSCs, which are a core component of the

[11] The result of the same test for open companies is: $t = -0.752$, $p = 0.452$; Wilcoxon $Z = -0.556$, $p = 0.578$.

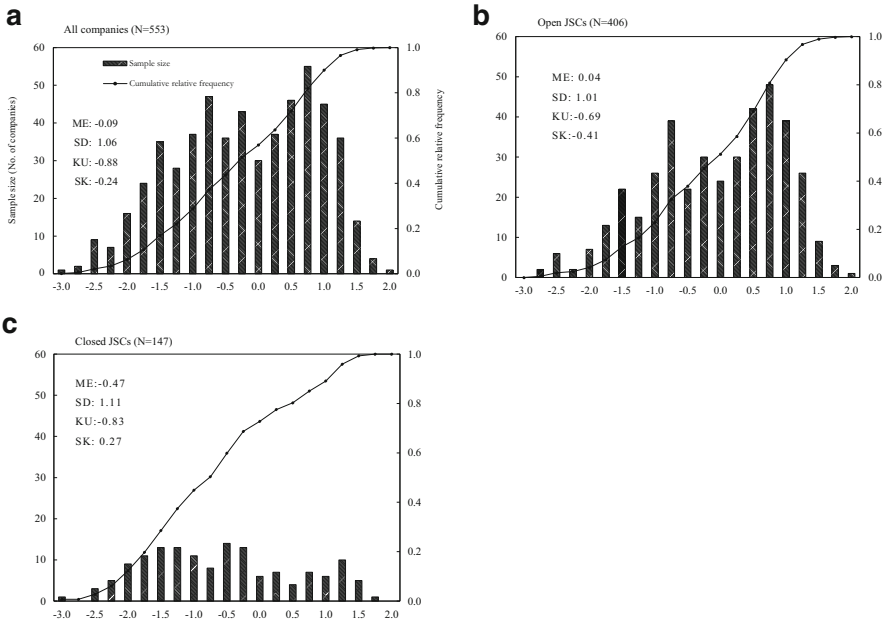

Fig. 1 Distribution of the openness score of the internal organizational structure. Note: This figure shows the distribution of the openness score of the internal organizational structure (*OPESCO*) in 553 firms participated in the joint enterprise survey. *OPESCO* is computed by Hayashi's quantification method III using 24 qualitative variables (categorical data), which represent the characteristics of a statutory corporate structure. Table 6 reports its results. ME, S.D., KU, and SK denote mean, standard deviation, kurtosis, and skewness, respectively

Russian business sector, into two types. Therefore, as long as the qualitative differences in an institutional equilibrium affect corporate governance and firm performance in these companies to a certain degree, that fact may be of great significance not only to their businesses but also to the Russian economy as a whole. In this section, we empirically examine this issue.

5.1 Hypothesis Development

The theoretical study of institutional diversity and imperfect institutions has made remarkable progress in recent years (Young 1998; Aoki 2001; Eggertsson 2005; Ostrom 2005). Although such research lacks precision in assessing how an institutional equilibrium affects the behavioral pattern of an economic entity, it provides highly suggestive clues to elucidating this mechanism. The organizational economics also gives helpful hints on this topic. Based on recent developments of institutional and organizational studies in economics, we propose three testable

hypotheses with regard to the possible impact of institutional arrangements of corporate forms and internal organizational structures of Russian JSCs on corporate governance and firm performance.

First, the institutional arrangement of corporate form and internal organizational structure in a stock company may be closely linked with the probability of the occurrence of infighting between management and shareholders. An institutional equilibrium in a corporate organization, which is reached as a result of a bargaining game between managers and owners over control rights, brings a certain degree of stability to the company management but does not prevent all conflicts of interest between the two parties stemming from changes in the outer environment and opportunistic behavior of the management executives. The probability of such a disagreement on company management between the managers and the shareholders developing into serious infighting largely depends on the degree of freedom shareholders have to voice their opinions to the management and exit ownership. Accordingly, we hypothesize that:

H_1: *The more institutionally open a company is, the more effective it will be at reducing the risk of internal conflict between shareholders and management.*

Second, in terms of the marginal effect to restrain infighting between shareholders and company managers, function-neutralizing complementarity between the corporate form and the internal structure is inferior to function-enhancing complementarity as institutional coordination. The reasons for the relatively low degree of the marginal functional strength of a function-neutralizing complementarity equilibrium are that no synergetic effects between functionally compatible institutions can be expected and that systemic distortion (coordination loss) may occur by coupling function-incompatible institutions. Hence, we expect that:

H_2: *Function-neutralizing complementarity between corporate forms and internal structures is inferior to function-enhancing complementarity in the sense that the additional openness of the internal organizational structure in closed JSCs may be less effective at deterring internal conflicts between corporate managers and shareholders than is the structure in open companies, ceteris paribus.*

Finally, the institutional equilibrium of corporate form and internal structure in a JSC has only an indirect impact on its productivity, investment, and restructuring activities. There are two rationales for this discussion. First, although it is true that the institutional coordination of corporate form and internal structure plays a significant role in disciplining corporate officers and ensuring organizational stabilization, it is equally true that firm performance in Russia is also largely affected by the business environment, the human capital quality of its top management, labor-management relationships, financial constraints, and interrelationships with business partners and the state. Particularly, in transitional Russia, corporate management is seriously crippled by hardening budget constraints due to the uncertain political and economic situation and the underdeveloped capital market and banking system. Therefore, it is quite possible that these factors have a more definitive impact on the performance of the corporate management of Russian firms in

comparison with the potential impact of the institutional equilibrium of corporate form and internal structure.

The second rationale, although not as realistic as the first one, is that many Russian firms determine their organizational arrangements for the purpose of optimizing their performance. As reported in Sect. 2, most of the managers of the surveyed firms replied that the current corporate form, whether an open or a closed JSC, was more beneficial to the development of their companies than the alternative form. This may suggest that many of the surveyed firms chose the corporate form most appropriate for the pursuit of firm performance. If the same logic is applicable to the formation of internal corporate structures and to the institutional arrangements of a company as a whole, there are no statistically significant correlations among firm performance and its corporate form, its internal structure, and the institutional equilibrium of the two. Based on the two rationales discussed above, we predict that:

H_3: *It appears difficult to find a statistically significant relationship between the institutional equilibrium of corporate form and internal structure of a Russian stock company and the firm's performance.*

5.2 Impact of Institutional Equilibrium on Corporate Governance

To verify hypotheses H_1 and H_2 presented in Sect. 5.1, we perform a probit estimation of discrete choice models using the following two dependent variables. One is an internal-conflict dummy variable (*INTCON*), which is assigned a value of 1 if a company has experienced harsh infighting between managers and shareholders at least once from 2001 to 2004. "Infighting between managers and shareholders," as reported here, refers to a situation in which the conflict was brought to the court's attention as a criminal or civil case or became a scandal attracting local and national media coverage. The other dependent variable is a CEO-displacement dummy (*CEOTUR*), in which a value of 1 is assigned to companies that saw CEO turnover at the request of shareholders at least once during the same period. According to the survey results, 206 (26.8 %) of the 768 firms had more than one internal conflict, and 170 (20.7 %) of the 821 firms changed their top management as a result of pressure from shareholders. Karpoff and Rice (1989) regard managerial turnover as a proxy variable to measure the magnitude of a control contest or shareholder disagreement. Our *CEOTUR* variable may have the same function. However, managerial turnovers in Russia are generally regarded as an arbitration process applied to reduce conflict between managers and shareholders and reach settlements outside of court. In fact, of the 158 surveyed firms that answered they had a CEO displacement from 2001 to 2004, only 53 companies (33.5 %) reported that they also experienced an internal conflict in the same period. In other words, companies that can attain a CEO displacement

relatively easily are able to settle conflicts effectively between managers and shareholders as to the reported CEO displacement. Consequently, these companies may prevent themselves from getting involved in a grave scandal attracting the attention of the court and mass media. Therefore, we predict that a corporate organization open to non-managerial shareholders deters internal conflicts between shareholders and management and increases the likelihood of shareholder-initiated CEO turnovers, *ceteris paribus*.

To examine the impact of corporate form and internal structure of a JSC and its institutional arrangement on the probability of such organizational behavior, we perform probit regression to estimate the individual effects of the corporate form and internal structure as well as the synergistic effects generated by the institutional coordination of these two elements. The individual effects of the corporate form and internal structure are estimated using an equation that takes an open JSC dummy (*OPECOM*) and *OPESCO* as independent variables together with variables controlling ownership structure (*OWNOUT*, *MANSHA*); affiliation with a business group (*GROFIR*); gross sales change from 2001 to 2004 (*SALGRO*), which represents the firm performance; company size (*COMSIZ*); and industry fixed effects.

The synergistic effect of the institutional coordination of a corporate form and an internal structure is estimated on the basis of two subsamples of open and closed JSCs using the above equations without the *OPECOM* variable. In consideration of the possible reverse-causality, in which an internal conflict or CEO turnover that occurred in the past may directly or indirectly affect the current state of the governance system, the empirical analysis in this subsection is limited to the firms that did not experience changes in major shareholders from 2001 to 2004, that is, companies whose ownership structure remained almost stable during that period. This sample constraint is considered to be quite effective in ruling out the possibility of the aforementioned reverse-causality, since it is a well-known fact that almost all large-scale internal structural changes in Russian firms are triggered by a shift in dominant shareholders resulting from a hostile takeover or merger.

Table 8 shows the results of univariate analysis. Both the χ^2-test and the Wilcoxon rank-sum test confirm that there is a statistically significant difference between open and closed JSCs in terms of the probability of shareholder-initiated CEO turnover at the 5 % level. On the other hand, the difference between two company groups divided on the basis of the median value of *OPESCO* is significant both at the 10 % level in terms of the probability of an internal conflict between shareholders and management executives as well as at the 1 % level with regard to the probability of CEO turnover.

The results of multivariate regression analysis are reported in Table 9.[12] As the table shows, the corporate form alone does not have any significant impact on the probability of an internal conflict or a CEO turnover. Moreover, the internal structure alone does not effectively deter internal conflicts. On the contrary, an

[12] Again, all of the correlation coefficients among the independent variables used in these models were below a threshold of 0.70.

Table 8 Comparison between open and closed joint-stock companies and between the two groups of companies divided by the openness of the internal organizational structure in terms of the probability of an internal conflict between shareholders and management and shareholder-initiated CEO turnover

	Corporate form						Openness of the internal organizational structure					
	Open JSCs			Closed JSCs			*OPESCO* > −.052			*OPESCO* < −.052		
	N	Occurrence rate	Median	N	Occurrence rate[a]	Median[b]	N	Occurrence rate	Median	N	Occurrence rate[a]	Median[b]
Internal conflict in 2001–2004 (*INTCON*)	355	0.21	0.00	182	0.23	0.00	165	0.19	0.00	194	0.25†	0.00$^{\#}$
Shareholder-initiated CEO turnover in 2001–2004 (*CEOTUR*)	374	0.20	0.00	188	0.12††	0.00$^{\#\#}$	172	0.25	0.00	195	0.12†††	0.00$^{\#\#\#}$

Note: This table shows results from the univariate comparison between open and closed JSCs and between the two groups of companies divided by the median of the openness of the internal organizational structure (*OPESCO*) in terms of the probability of an internal conflict between shareholders and management and shareholder-initiated CEO turnover in the period of 2001–2004 using the results of the joint enterprise survey. *OPESCO* is computed by Hayashi's quantification method III using 24 qualitative variables (categorical data), which represent the characteristics of a statutory corporate structure. Table 6 reports its results. The Appendix provides detailed variable definitions of *INTCON* and *CEOTUR*.

[a] †††The difference in the proportions in comparison with its counter category is significant at the 1 % level according to the χ^2 test; ††at the 5% level; †at the 10 % level.

[b] $^{\#\#\#}$The difference in comparison with its counter category is significant at the 1 % level according to the Wilcoxon rank-sum test; $^{\#\#}$at the 5 % level; $^{\#}$at the 10 % level.

Table 9 Probit regression analysis of the impacts of the institutional coordination of corporate form and internal organizational structure in a joint-stock company on the probability of internal conflicts between shareholders and management and shareholder-initiated CEO turnover

Dependent variables	*INTCON*			*CEOTUR*		
Sample constraints	All companies	Open JSCs	Closed JSCs	All companies	Open JSCs	Closed JSCs
Model	[1]	[2]	[3]	[4]	[5]	[6]
OPECOM	−0.023			0.010		
	(0.06)			(0.05)		
OPESCO	−0.024	−0.056*	0.050	0.046**	0.054**	0.028
	(0.03)	(0.03)	(0.06)	(0.02)	(0.03)	(0.02)
OWNOUT	0.045***	0.040***	0.076**	0.017*	0.019	0.011
	(0.01)	(0.01)	(0.03)	(0.01)	(0.01)	(0.01)
MANSHA	0.045	0.051	0.005	−0.173***	−0.149***	−0.169
	(0.05)	(0.06)	(0.12)	(0.05)	(0.05)	(0.11)
GROFIR	−0.047	−0.069	−0.132	0.066	0.150**	−0.034
	(0.06)	(0.07)	(0.12)	(0.05)	(0.06)	(0.03)
SALGRO	−0.021	−0.010	−0.090**	0.011	−0.003	0.014
	(0.02)	(0.02)	(0.04)	(0.02)	(0.02)	(0.01)
COMSIZ	0.006	0.024	−0.073	−0.015	−0.025	0.008
	(0.02)	(0.03)	(0.05)	(0.02)	(0.02)	(0.01)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	317	238	74	321	237	73
Pseudo R^2	0.07	0.08	0.14	0.17	0.17	0.43
Log likelihood	−157.42	−115.93	−35.13	−121.27	−96.15	−15.53

Note: This table reports results from the regressions of the internal conflicts between shareholders and top management and the shareholder-initiated CEO turnover on the variables reflecting corporate form, openness of the internal organizational structure, ownership structure, relationship with business groups, past firm performance, and company size. We estimate models that take *INTCON*, a qualitative variable that takes a value of 1 for firms that have experienced harsh infighting between managers and shareholders at least once from 2001 to 2004, or *CEOTUR*, a qualitative variable in which a value of 1 is assigned to companies that saw CEO turnover at the request of shareholders at least once during the same period, as the dependent variable using a probit estimator. The Appendix provides detailed variable definitions. White's heteroskedasticity-consistent standard errors are shown in parentheses.

***Significant at the 1 % level; **at the 5 % level; *at the 10 % level.

increase in the openness of an open company's internal structure positively affects the prevention of corporate infighting and expansion of shareholders' influence over the managerial selection process, and its magnitude and statistical significance are larger than those for an internal structure's individual effects. In contrast, a closed company's attempts to design a more open internal structure yield no statistically significant result. These results strongly suggest that the function-enhancing complementarity between corporate form and internal structure in a JSC can produce considerable synergistic effects and, conversely, that the function-neutralizing institutional complementarity may be accompanied by a serious coordination loss to corporate management.

On the other hand, empirical evidence on the corporate governance of Russian firms suggests that *OWNOUT* has a positive sign with statistical significance in many cases and that *MANSHA* is negative and significant in Models [4] and [5], taking *CEOTUR* as the dependent variable.[13] Furthermore, the estimation result that *SALGRO* is not significant for the probability of an internal conflict and CEO turnover except for Model [3] is consistent with those of preceding studies that repeatedly maintain that the managerial turnover in Russian firms was not sensitive to their performance (Iwasaki 2007c; Abe and Iwasaki 2010). It is possible that, in Russia, corporate infighting and CEO turnover need to be seen in the context of power struggles between managers and outside investors rather than in the context of shareholders' complaints blaming managers for poor performance or company scandals.

5.3 *Impact of Institutional Equilibrium on Firm Performance*

Hypothesis H_3, regarding the relationship between institutional equilibrium and firm performance, is also supported by the survey data. Table 10 shows the results of univariate comparative analysis of two sample groups classified by corporate form and by the degree of openness of their internal structure on the basis of 13 criteria. Six of them, including labor productivity and changes in gross sales, are related to business performance for the past several years. The remaining seven, including the intensiveness of investment activities and changes in research and development (R&D) expenditure, reflect restructuring activities.

In each of these two types of comparison, no significant difference is observed in more than half of the criteria. In addition, the statistical differences found in the remaining criteria do not necessarily demonstrate an advantage of an open JSC over a closed JSC, nor do they suggest any advantage of an open internal structure over a closed one, and *vice versa*. Moreover, none of the regression analyses conducted with these performance indices as the dependent variables (not reported) produced systematically significant estimates of *OPECOM*, *OPESCO*, and the interaction term of these two variables.[14] To sum up, these empirical results indicate that an institutional equilibrium between corporate form and internal organizational structure in a Russian JSC is less likely to have a direct impact on firm performance.

[13] We re-estimated all models in Table 9, excluding ownership variables from the independent variables, and confirmed that this treatment did not have any influence on estimates of *OPECOM* and *OPESCO*.

[14] In almost all of these regression results, the independent variables representing the affiliation with a business group, company size, and financial constraints are estimated with high statistical significance. This also supports hypothesis H_3.

Table 10 Comparison between open and closed joint-stock companies and between the two groups of companies divided by the openness of the internal organizational structure in terms of firm performance

	Corporate form						Openness of the internal organizational structure					
	Open JSCs			Closed JSCs			*OPESCO* > −.052			*OPESCO* < −.052		
	N	Mean/ proportion	Median	N	Mean/ proportion[a]	Median[b]	N	Mean/ proportion	Median	N	Mean/ proportion[a]	Median[b]
Gross sales per employee in 2004 (1,000 rubles)[c]	328	3502.94	387.31	166	2917.03	341.67	156	6645.31	400.00	180	1452.89	333.33$^{\#\#\#}$
Changes in gross sales in 2000–2004[e]	371	1.65	2.00	187	1.51	2.00	168	1.83	2.00	195	1.38***	1.00$^{\#\#\#}$
Changes in the total number of employees in 2001–2005[f]	373	−0.13	0.00	189	0.27***	0.00$^{\#\#\#}$	170	−0.19	0.00	195	0.06*	0.00$^{\#\#}$
Changes in average wages in 2000–2004[e]	369	1.98	2.00	189	1.89	2.00	169	2.14	2.00	195	1.85***	2.00$^{\#\#\#}$
Financial/economic situation (at the time of the survey)[f]	373	0.36	0.00	187	0.33	0.00	170	0.41	0.00	195	0.22	0.00
Frequency of dividend payments in 2001–2003[g]	365	1.05	0.00	187	0.75**	0.00$^{\#\#}$	167	0.95	0.00	195	0.99	0.00
Intensiveness of investment in 2001–2004[h]	364	1.16	1.00	184	0.98***	1.00$^{\#\#}$	167	1.23	1.00	194	1.05**	1.00$^{\#\#}$
Changes in R&D expenditure in 2001–2004[i]	370	1.42	2.00	186	1.36	2.00	169	1.48	2.00	194	1.46	2.00
Changes in marketing and advertising expenditure in 2001–2004[i]	370	2.28	3.00	188	2.16	2.00$^{\#}$	170	2.21	3.00	195	2.47**	3.00$^{\#}$
Introduction of new production facilities in 2001–2004[j]	366	0.66	1.00	183	0.68	1.00	167	0.63	1.00	192	0.69	1.00
Employment of new technology in 2001–2004 [j]	364	0.54	1.00	184	0.51	1.00	167	0.54	1.00	192	0.53	1.00
Development of new products or services in 2001–2004[j]	368	0.60	1.00	184	0.54	1.00	170	0.58	1.00	193	0.58	1.00
ISO certification obtained for own products in 2001–2004[j]	360	0.48	0.00	182	0.31†††	0.00$^{\#\#\#}$	166	0.49	0.00	189	0.41	0.00

Note: This table shows the results of univariate comparison between open and closed JSCs and between the two groups of companies divided by the median of the openness of the internal organizational structure (*OPESCO*) in terms of business performance and restructuring activities using the results of the joint enterprise survey. *OPESCO* is computed by Hayashi's quantification method III using 24 qualitative variables (categorical data), which represent the characteristics of a statutory corporate structure. Table 6 reports its results.

[a] [***]The difference in the means in comparison with its counter category is significant at the 1 % level according to the *t*-test (the Welch test was performed instead of the *t*-test when the null-hypothesis that the two samples have the same population variance was rejected by *F*-test for homoskedasticity); [**]at the 5 % level; [†††]the difference of the proportions in comparison with its counter category is significant at the 1 % level according to the χ^2 test.

[b] [###]The difference in comparison with its counter category is significant at the 1 % level according to the Wilcoxon rank-sum test; [##]at the 5 % level; [#]at the 10 % level.

[c]Excluding discordant value.

[d]The changes are rated on the following 5-point scale: −1: decreased; 0: no change; 1: increased by less than 1.5 times; 2: increased by 1.5 or more but less than 2.0 times; 3: increased by 2.0 or more times.

[e]The changes are rated on the following 5-point scale: −2: decreased by 20 % or more; −1: decreased by less than 20 %; 0: no change; 1: increased by less than 20 %; 2: increased by 20 % or more.

[f]This item is rated on the following 5-point scale: −2: bad; −1: poor; 0: average; 1: good; 2: fairly good.

[g]Excluding all firms established after 2001.

[h] This item is rated on the following 3-point scale: 0: no investment made; 1: small-scale investment made; 2: large-scale investment made.

[i] This item is rated on the following 4-point scale: 0: no spending; 1: expenditure decreased; 2: expenditure remained unchanged; 3: expenditure increased.

[j]This item takes a value of 1 to corresponding firms.

6 Conclusion

In Russia, an overwhelming number of JSCs choose to become closed companies despite the fact that this corporate form strays far from the primary nature of joint-stock companies that work as an economic mechanism to raise capital from a wide range of private investors and to increase shareholder wealth as effectively as possible. This trend is also true for medium- and large-scale enterprises in the manufacturing and communications sectors. In this study, we theoretically and empirically examined this interesting economic phenomenon using the results of a nationwide enterprise survey conducted in 2005.

In the first part of this chapter, we explored the mechanism behind the organizational choice between two alternative corporate forms and identified the following four factors that encourage many Russian firms to be closed: (a) a widespread insider-dominating corporate ownership structure emerging as a result of the mass-privatization policy, (b) a strong orientation among managers toward closed corporate organization due to underdeveloped capital and managerial markets, (c) slumping needs for corporate finance, and (d) insufficient financial support from local financial institutions. The relationship between ownership structure and corporate form does exist, even if the endogeneity of the two factors is assumed. The fact that the above four factors still have a significant impact on the behavioral patterns of Russian companies 14 years after the collapse of the Soviet Union reminds us of the difficult and time-consuming transition process from a centrally planned to a market-oriented economic system. In addition to the four determinants outlined above, we also found that the historical path dependency of the enterprise privatization in the early 1990s and the intense formation of business groups have a significant impact on the choice of corporate form by Russian firms.

In the second half of this chapter, we examined the institutional coordination between corporate forms and internal organizational structures in Russian stock companies and their effect on corporate governance and firm performance. The provisions of the Law on JSCs force Russian firms to choose between an open and a closed JSC as their legal form of incorporation, resulting in the emergence of the two contrasting types of institutional equilibrium. The reason some Russian enterprises try to add a reverse-functional aspect to their internal structures needs to be understood in the context of their economically rational organizational behavior to adjust the excessive functional strengths of their corporate form, which are exogenous to them. Such an organizational reaction of Russian firms to corporate law probably plays an important role in enabling them to perform stable business operations. According to the empirical evidence reported in the previous section, however, compared with a function-enhancing complementarity equilibrium coupling functionally compatible institutions, the function-neutralizing complementarity equilibrium is quite ineffective for preventing serious internal conflicts between shareholders and company managers and for allowing shareholders to dismiss managers, both of which are critical challenges facing corporate governance in Russia today.

Now Russia is required to build a legal framework that can eliminate the need for enterprises to maintain the inefficient institutional equilibrium of firm organization. Yet it will be difficult to achieve this objective in a way that forces all JSCs to become open companies, as has been proposed by the lower house of the Federal Assembly (*The State Duma*) and is currently being discussed within the federal government (Osipenko 2005). The most essential policy solution is to facilitate an environment that motivates Russian firms to voluntarily unlock their organizations. Without this condition, the convergence policy of the corporate forms into open JSCs may drive more companies toward a function-neutralizing complementarity equilibrium. After all, the sound development of the Russian business sector can be achieved only by promoting the transition to a market economy in parallel with an effort to move forward with appropriate and comprehensive structural reforms. There is no shortcut to this process.

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Appendix

Definition, descriptive statistics, and data source of variables used for empirical analysis

Variable name	Definition	Descriptive statistics			
		Mean	S.D.	Min.	Max.
CLOCOM	Closed JSC dummy[a]	0.33	0.47	0	1
OPECOM	Open JSC dummy[a]	0.67	0.47	0	1
OWNOUT	Outsider ownership share[b, c]	1.87	2.14	0	5
OWNSTA	State ownership share[b]	0.37	1.02	0	5
OWNFED	Ownership share by federal government agencies[b]	0.23	0.82	0	5
OWNREG	Ownership share by regional and local government agencies[b]	0.17	0.70	0	5
OWNPRI	Private ownership share[b, c]	1.26	1.90	0	5
OWNBAN	Ownership share by commercial banks[b]	0.11	0.50	0	5
OWNFIN	Ownership share by investment funds and other financial institutions[b]	0.16	0.68	0	5

(continued)

Variable name	Definition	Descriptive statistics			
		Mean	S.D.	Min.	Max.
OWNCOR	Ownership share by non-financial corporate shareholders[b]	0.88	1.65	0	5
OWNFOR	Ownership share by foreign investors[b]	0.22	0.88	0	5
MANSHA	Large managerial shareholder dummy[a]	0.51	0.50	0	1
SECPLA	Securities issuance planning dummy[a]	0.06	0.29	0	2
RELBAN	Relationship-banking dummy[a]	0.82	0.39	0	1
NUMFIN	Number of financial institutions per 1,000 firms in the location	1.19	0.31	0.54	2.18
GROFIR	Business group participation dummy[a]	0.33	0.47	0	1
GROCOR	Core business group member dummy[a]	0.05	0.22	0	1
GROAFF	Business group affiliation dummy[a]	0.28	0.45	0	1
GROSIZ	Natural logarithm of the total number of member firms of a business group	0.68	1.13	0	6.40
PRICOM	Dummy for former state-owned or ex-municipal, now privatized, companies[a]	0.69	0.46	0	1
SPIOFF	Dummy for firms separated from state-owned or privatized companies[a]	0.10	0.30	0	1
COMSIZ	Natural logarithm of the total number of employees	6.16	0.93	4.66	9.42
CEOSHA	Dummy of shareholding by incumbent CEO (or company president)[a]	0.63	0.48	0	1
DOMSHA	Dummy of a shareholder or shareholder group dominating corporate management[a]	0.87	0.33	0	1
CEOAGE	Age level of incumbent CEO (or company president)[d]	2.43	0.91	0	5
COMDOM	Intensity of competition with domestic firms in product market[e]	1.50	0.69	0	2
OPESCO	Indicator of the openness of the internal organizational structure[f]	−0.09	1.06	−2.91	2.02
INTCON	Internal conflict dummy[a]	0.27	0.44	0	1
CEOTUR	Shareholder-initiated CEO turnover dummy[a]	0.21	0.41	0	1
SALGRO	Changes in gross sales[g]	1.62	1.27	−2	2

Source: *NUMFIN* was calculated by the author based on Federal State Statistical Service (2005) and the Central Bank of the Russian Federation (2005). Other variables are based on the results of the joint enterprise survey.

Note: [a]Dichotomous variable, which takes a value of 1 to corresponding firms.

[b]"Ownership share" means an ownership share rated on the following 6-point scale: 0: 0 %; 1: 10.0 % or less; 2: 10.1–25.0 %; 3: 25.1–50.0 %; 4: 50.1–75.0 %; 5: 75.1–100.0 %.

[c]Excluding ownership by domestic individual shareholders.

[d]Age level is rated on the following 6-point scale: 0: 30 years old or younger; 1: 31–40 years old; 2: 41–50 years old; 3: 51–60 years old; 4: 61–70 years old; 5: 71 years old or older.

[e]The intensity of competition is rated on the following 3-point scale: 0: no competition; 1: not very competitive; 2: very competitive.

[f]Sample score computed by Hayashi's quantification method III using 24 qualitative variables (categorical data), which represent the characteristics of a statutory corporate structure. Table 6 reports its results.

[g]The changes are rated on the following 5-point scale: −2: decreased by 20 % or more; −1: decreased by less than 20 %; 0: no change; 1: increased by less than 20 %; 2: increased by 20 % or more.

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