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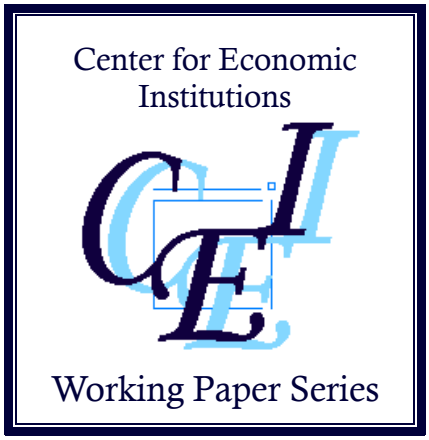

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Post-Privatization Ownership and Firm Performance: A Large Meta-Analysis of the Transition Literature†

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Abstract: This paper aims to perform a meta-analysis of the relationship between post-privatization ownership and firm performance using a large database of the transition literature. Baseline estimation of a meta-regression model that employs a total of 2894 estimates drawn from 121 previous studies indicated the superior impact of foreign ownership on firm performance in comparison with state and domestic private entities. However, it did not go as far as to comprehensively verify the series of hypotheses concerning the interrelationship between different ownership types. The estimation of an extended meta-regression model that explicitly controls for the idiosyncrasies of transition economies and privatization policies strongly suggested that differences between countries in terms of location, privatization method, and policy implementation speed are the cause of the opaqueness seen in the empirical results of the previous literature. The definite evidence of the harmfulness of the voucher privatization for ex-post firm performance is one of the most noteworthy empirical findings obtained from the meta-analysis in this paper.

JEL classification numbers: D22, G32, G34, L25, P21, P31

Keywords: post-privatization ownership, firm performance, transition economies, meta-analysis, publication selection bias, Central and Eastern Europe, former Soviet Union

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1. Introduction

"Privatization is transition" (Brada, 1996). While this phrase is obviously an exaggeration, in the sense that without privatization, the countries of Central and Eastern Europe (CEE) and the former Soviet Union (FSU) could not have changed themselves into market economies, no one particularly objects to accepting it as a part of the truth. This is because state ownership, alongside state planning, was positioned at the heart of the socialist economic system, and systemic transformation is the process of replacing these elements with those of the capitalist economic system, namely private ownership and market principles. If the comprehensive nationalization of the means of production was the point of transformation to a socialist economy, their re-privatization can be regarded as a giant leap to a market-oriented economy. However, the "leaps" observed in CEE and FSU countries exhibited their own diversity, being strongly affected by historical conditions in each country, international circumstances, and the motives of foreign governments and multinational firms.

It is probably no exaggeration to say that the question of whether a privatization policy would improve the performance of former socialist firms has been the issue of most interest, and also a source of debate, in the field of transition economics since 1989. Theoretically speaking, if the dysfunction of state-owned firms could be regarded as the fundamental cause of the stagnation and demise of the socialist planned system, their privatization should have resulted in an improvement in firm performance. In fact, as **Figure 1** shows, according to assessments of the transition progress by the European Bank for Reconstruction and Development (EBRD), a positive correlation can be observed between the degree of success of the privatization policy and the degree of progress with enterprise restructuring. Actually, according to the approximate line drawn in the figure, a marginal increase of 1.0 in the mean of small-scale and large-scale privatization indicators leads to a 1.108-point increase in the enterprise restructuring indicator, with a 1% statistical significance level.

Nevertheless, it is very difficult to conclude that microeconomic empirical results produced by a series of previous studies harmonize with the above theoretical forecast. In fact, while numerous studies have found that, as compared with state enterprises, private and former state-owned privatized firms are relatively superior in terms of productivity and financial performance, other studies have not been able to confirm a statistically significant correlation between post-privatization ownership and firm performance. Furthermore, an analysis performed of quite a number of studies has produced the surprising finding that companies still under state control are actually performing better than their privatized firms.[1]

[1] For an example of such a study, see Iwasaki's (2007) systematic review of the Russian literature.

Faced with the reality that solid empirical evidence of the privatization effect on firm restructuring cannot be obtained from a simple comparison of state firms and private firms, researchers have turned their attention to the diversity of the aforementioned "leap" process. Although numerous factors led to this diversity, the one they focused on first was the diversity of the new owners who appeared following enterprise privatization. As we will discuss later, the possibility that differences between insiders and outside investors, differences between insider managers and employees, and differences in the types and nationalities of outside investors could affect firm performance is a serious issue in the field of corporate finance theory, where it has led to vigorous debate. In the field of transition economics, researchers also strongly recognized the importance of this viewpoint by the mid 1990s, when the initial phase of privatization of state companies in almost all CEE and FSU countries was drawing to a close.

As a result, empirical studies have challenged the comparative analysis of a variety of company owners from around this time. Earle et al. (1996) and Claessens (1997) produced pioneering research results, while more recent years have seen other researchers such as Cieślik et al. (2015), Shepotylo and Vakhitov (2015), and Vintilă and Gherghina (2015) entering the debate. Results from empirical research have gradually accumulated in this way, and this has greatly promoted the development of knowledge on the topic of which owner types are best for improving firm performance. However, it is also a fact that the greater the empirical evidence, the more ambiguous the big picture becomes. Djankov and Murrell (2002) and Estrin et al. (2009) are systematic reviews that attempt to overcome the limitations of piecemeal empirical studies. In this paper, by using the largest database of literature that includes numerous previous studies not covered by these two articles and by attempting a more methodologically thorough and refined meta-analysis, we will shed light on what overall conclusions can be reached from the research of transition economies that has been conducted over the past quarter century concerning the interrelationship between post-privatization ownership and firm performance. This is the primary objective of this paper.

Another type of diversity that numerous researchers have studied is differences between countries as seen in the nature of privatization policies themselves. CEE and FSU countries privatized firms using a combination of four main methods: (1) the voucher system, (2) management and employee buyouts (MEBOs), (3) direct sales to strategic investors, and (4) the auction system. As shown in **Table 1**, the degree of priority given to each privatization method and the ways in which the methods were combined showed great differences from country to country. Furthermore, as the figures for the private sector's share of gross domestic product (GDP) in 2010 illustrate, striking differences also emerged among countries in their speed of implementing the privatization policy. In addition to the above points, researchers have also been

interested in differences in the policy execution capabilities of governments, the reliability of their political commitment, and policy neutrality toward the recipients of state-owned assets; this has resulted in a vigorous debate on interregional differences in the CEE and FSU area (Myant and Drahokoupil, 2010; Åslund, 2013).[2]

To address these points, comparisons of a wide range of transition countries are indispensable. It is, therefore, obvious that empirical studies targeting only specific countries or regions cannot deliver firm conclusions. To overcome this difficulty, Djankov and Murrell (2002) and Estrin et al. (2009) attempted systematic reviews of the previous literature focusing on differences between the CEE and FSU regions. In this paper, we will also try to investigate the possibility that differences in the privatization policy methods and the speed of implementation affected the empirical findings of the previous research. This is the secondary objective of this paper.

Although baseline estimates from a meta-regression model that employed 2894 estimates drawn from 121 previous studies established proof of superior performance by firms owned by foreign investors as compared with that of firms owned by the state and domestic private entities, they did not go as far as to comprehensively verify a series of hypotheses concerning different owner types. Estimates from an extended meta-regression model that used an interaction term to explicitly control for the idiosyncrasies of transition economies and privatization policies strongly suggested that differences between countries in terms of location, privatization method, and the speed of policy implementation cause opaqueness in the empirical results of previous studies. Definitive evidence of the harmfulness of voucher privatization for ex-post firm performance is one of the most noteworthy empirical findings obtained from the meta-analysis in this paper.

The remainder of the paper is organized as follows: In the next section, we present testable hypotheses to verify by meta-analysis. In Section 3, we describe how we retrieved and selected literature for the meta-analysis, provide an overview of the collected estimates, and describe the methodology of meta-analysis. In Section 4, we attempt a meta-synthesis of the collected estimates, while in Section 5, we estimate a meta-regression model to examine the possible heterogeneity of the extant literature. In Section 6, an extended meta-regression model that takes into account the idiosyncrasies of transition countries and privatization policies is estimated. In Section 7, we assess the presence and degree of publication selection bias in this research field and, finally, in Section 8, we summarize major findings obtained from the meta-analysis and conclude the paper.

[2] Factors such as the nature of the legal framework for firms, the degree of the establishment of capital markets, and the impact of the EU enlargement process also played an important role in bringing about diversity in the privatization process. However, those factors are far less interesting to transition economics researchers than are factors such as differences of owners and privatization policy.

2. Post-Privatization Ownership and Firm Performance: Literature Review and Testable Hypotheses

In this section, through a comprehensive literature review, we present the hypotheses regarding the relationship between post-privatization ownership and firm performance to be verified in this paper. In order to tackle the two research objectives stated in the Introduction, in Subsection 2.1, we focus on the general debate concerning the relative superiority/inferiority of different owner types, while in Subsection 2.2, we explore various factors that are peculiar to enterprise privatization carried out in transition economies.

2.1 Ownership and Firm Performance

To complete a systemic transformation from a planned system to a market economy, the large-scale transfer of ownership from the state to the private sector is unavoidable. Therefore, the positioning of the interrelationship between ownership and firm performance as one of the focal points of transition economics was a natural development (IMF, 2014). At the root of this so-called "privatization debate" is a belief that has also been supported by the outcome of research in comparative economic systems and corporate finance. In other words, there is a strong belief that, as compared as compared with the management and production activities of state-owned enterprises, those of privately owned firms are far more efficient (Roland, 2008).[3] Initially, therefore, researchers of transition economies have focused their efforts on providing evidence that the performance of private firms in CEE and FSU countries is vastly superior to that of firms that have remained under state ownership. This is because, based on the premise of the collapse of socialism and the transition to capitalism in this region, the proposition that "an economy in which all major decisions on investment, employment, and production are left to private firms will outperform a mixed economy where governments play a significant role in such decisions" (Quiggin, 2010, p. 189) was self-evident to them. Actually, the notion that state enterprises cannot achieve high efficiency has been advocated repeatedly in the fields of public choice theory and financial economics.

However, this proposition has not necessarily been completely proven in the field of economics, even in research on advanced economies. In fact, the situation was this: "Many empirical studies comparing private and public firms confirm that private enterprises are more efficient than public enterprises producing the same goods or very close substitutes, given the same or very similar technology, regulatory constraints, and financial capabilities. As could be

[3] János Kornai, who investigated reproduction causality in economic systems, analyzed the chain of causes and effects, which led him to claim that state ownership led to a shortage economy and private ownership to a surplus economy; he also emphasized the effectiveness of the transfer of ownership in system transformation (Kornai, 1980, 1992, 2008, 2014).

expected, however, some counter-evidence also exists which shows exactly the opposite. Moreover, some further empirical studies report ambiguous results: the public firm is more efficient according to one indicator, whereas the private firm is more efficient according to another indicator" (Bös, 1991, p. 7). Furthermore, regardless of the distinction between public and private ownership, a "separation of ownership and control," in the sense that business execution is performed by professional managers, is observed in both cases. In addition, while the identity of the owners is obviously important, the nature of the organizational structure, which exerts a significant impact on the incentive structure for the company's managers and its rank-and-file employees, is also vital. Because of the above-mentioned facts, the proposition that private ownership is superior to state ownership was not guaranteed to match the expectations for transition countries (Stiglitz, 1994). Actually, as stated in the Introduction of this paper, while numerous studies have been published that identify relatively good firm performance by private companies as compared with state-owned enterprises, there have also been studies that have not found a significant difference between the two and studies that have demonstrated the relative superiority of state enterprises. Even though such findings have not threatened the dominant view that private owners are superior to the state, by the mid 1990s, it had already become fairly clear that approaches based on a "state vs. private" dichotomy have limits. Therefore, since the late 1990s, most researchers have begun to focus on the diversity of firm owners in the post-privatization period.

Four categories of firm ownership can be applied to CEE and FSU economies: (1) the state, (2) insiders, i.e., firm managers and employees (workers' associations), (3) domestic private-sector investors, and (4) foreign investors. Of these types, insiders garnered the most attention. One main reason for this was that privatizations favoring MEBOs or insiders took place in many transition countries. In nations such as Poland, for example, employee ownership in particular was positioned as an extension of market socialism and worker management approaches and, so, was of great interest to researchers.

This type of firm ownership by insiders is a full-fledged form of private ownership. There is no doubt that by making their property rights clear, the insiders are strongly motivated to make profits. However, the impact on firm performance is not regarded as being entirely positive. For example, insiders tend to feel negatively toward restructurings involving the mass dismissal of workers. For this reason, the risk of a gradual deterioration in firm performance is by no means small. There is also a risk that managers will go along with the employees' wishes and adopt a short-term, opportunistic outlook, choosing to raise wages rather than invest for the future.

However, there is also counterevidence to the above "insider inefficiency hypothesis." In fact, the history of employee stock ownership plans (ESOPs) in the U.S., a common decision-

making system in Germany, and the in-house labor market in Japan strongly suggests that employee ownership and management participation by insiders do not directly lead to a worsening performance (Frydman and Rapaczynski, 1994). In other words, in these advanced economies, an "incentive compatibility" established due to the linkage of the promotion of insiders themselves and improvements in profits and firm performance clearly enhances management. Therefore, if the positive impact of the incentive compatibility exceeds the negative impact of the aforementioned inappropriateness of management decisions, insiders may become more desirable owners than the state.

When investigating the impact of insider ownership on firm performance, a strict distinction must be made between the two, except in cases where managers and rank-and-file employees (workers' associations) collude with each other. Managers from the socialist era (so-called "red executives") may not be adequately suited to the new management environment in the transition period; however, at the very least, they are clearly more skilled than ordinary workers. Furthermore, it is easy to imagine that the financial and material benefits and the social reputation received by managers when they improve performance will be more than it would be for rank-and-file employees. In other words, all else being equal, the motivation for managers to restructure their firms is much higher than it is for employees. For this reason, the hypothesis that insider managers are superior to insider employees as owners of privatized firms is widely accepted (Earle and Estrin, 1996).[4] However, the motivation with regard to management by insider employees will differ depending on the scale of their ownership. Generally, controlling owners with a majority stake are more interested in management than are minority owners.

In contrast to this amphibious effect of insider ownership on firm performance, the effect of ownership by outsiders is assigned a clearer and more active significance. Frydman et al. (2006) concluded that their research results were consistent with the "hypothesis that the superior results of product restructuring by firms privatized to outside owners are a function of their greater willingness to accept risks and their freedom to make decisions without having to justify them to employee owners or a hierarchy of state officials" (p. 218). As can be seen from their remark, economists widely believe that outside investors, who are free of the internal self-protective interests that restrict insiders, inevitably try harder than the state or insiders to improve the management of the companies they invest in.

Nevertheless, because an extremely diverse range of economic entities are outside investors,

[4] Earle and Estrin (1996) also noted that there are cases in which managers are not superior to employees. These include cases where employees internalize the social costs of layoffs to a greater extent than managers, cases where the managers change frequently and the firm is not managed with a long-term perspective, and cases where the transfer of shares is strongly curtailed due to the concentration of ownership in the hands of a few managers.

the degree of impact on firm performance will vary greatly depending on their identity (Frydman et al., 2007). Particularly in the context of transition economics, a great deal of attention has been paid to two matters: differences between individual investors and institutional investors and differences based on nationality.[5]

With respect to differences between individual investors and institutional investors, it has been argued that while the former are only minority shareholders, the latter have a strong tendency to be major shareholders; it has also been argued that institutional investors are more motivated by profit than are individual investors and, therefore, apply more pressure on firm managers to improve performance. As a result, the prediction holds that institutional investors will behave more proactively and effectively as corporate restructurers than individual investors (Vittas and Michelitsch, 1996; Stark and Bruszt, 1998).

However, quite a number of researchers hold reserved views concerning financial institutions. In CEE and FSU countries, financial institutions, mainly commercial banks, by becoming shareholders in or creditors of privatized companies, have been expected to impose hard budget constraints on the companies and, therefore, strongly stimulate firm restructuring. However, it was extremely difficult in these countries to have well-performing commercial banks under the two-layered banking system (Iwasaki and Uegaki, 2017), while direct and indirect government protection meant that a paternalistic relationship between state-owned banks and large formerly state-owned firms often remained. Due to the above process, financial institutions in transition economies did not succeed in obtaining the skills and incentives they needed to perform financial intermediary functions, monitoring functions, and asset management. As a consequence, it has been argued that, far from becoming capable players of restructuring privatized firms, they ended up forming financial groups that were dependent on collusion with firms (Frydman and Rapaczynski, 1994; Dittus and Prowse, 1996). Nevertheless, because a series of empirical studies

[5] Institutional investors can be broadly classified into two types (Stark and Bruszt, 1998). The first is nonprofit organizations (NPOs) such as hospitals, educational institutions, and foundations. In the case of NPOs, investing money is essential to ensuring the organization's survival, so their investment strategies tend to be cautious; they tend to be more interested in profit (capital gains and dividends) and the selection of firm managers who can deliver it. The second is intercorporate holdings, in which banks, insurance companies, and industrial enterprises hold shares of other corporations. As shown by the experience of cross-shareholdings in countries such as Japan and Germany, these for-profit organizations can become owners that provide favorable treatment to firm managers. However, it has been pointed out that in Hungary, the profit motive of institutional investors has not necessarily been particularly strong (Stark and Bruszt, 1998, pp. 64–70). In the Czech Republic, meanwhile, it has been reported that as a result of voucher privatization, institutional investors, particularly investment privatization funds, acquired ownership of a large number of state-owned firms but that due to financial and technical restrictions, they did not necessarily deliver adequate improvements in management (Coffee, 1996).

of financial and industrial groups in Russia have given high marks to commercial banks as restructuring promoters (Brown et al., 1999; Perotti and Gelfer, 2001; Dolgopyatova et al., 2009), it is highly likely that the validity of the above problems with financial institutions will differ considerably by country and era. Therefore, the foundations of the generally accepted theory concerning the relative superiority of institutional investors over individual investors as corporate restructuring promoters in the post-privatization period are not regarded to have been overturned.

A certain level of consensus has been established among researchers of transition economies concerning differences between domestic and foreign investors. In fact, from the initial phase of the transition, the view that foreign investors could have a greater impact on firm restructuring than domestic investors was strongly expressed. This was because by bringing in not only vast sums of capital but also advanced production technology and management know-how, as well as other forms of tacit knowledge, foreign investors have a lot of potential for dramatically improving the productivity and efficiency of the firms they own (Iwasaki and Tokunaga, 2014, 2016). Furthermore, in the process of being incorporated into the international division-of-labor structure of multinational firms through direct investment, domestic firms have the potential to secure a robust operational foundation that cannot be compared with what they had during the socialist era (Dunning, 1986; Blomstrom and Wolff, 1994; Kogut, 1996).[6] These were clearly things that could not have been achieved by domestic investors in those countries under socialism, so many researchers predicted that the superiority of foreign investors over domestic investors would be universally observed in every transition economy.[7]

The debate above can be summarized as follows: Researchers agree on three hypotheses concerning the impact of post-privatization ownership structure on firm performance in the post-privatization period, namely that (1) private ownership is superior to state ownership, (2) outside investors outperform insiders, and (3) foreign investors work better than domestic investors.

[6] Blomstrom and Wolff (1994) used this perspective to investigate the case of improvements at Mexican firms, while Dunning (1986) investigated the effect of Japanese firms on the British firms in which they had invested.

[7] However, an alternative, albeit minority, view also exists. This is that because foreign investors are not necessarily experts on conditions in advanced countries, there is a risk that it will take considerable time for them to introduce technology in the countries concerned. Furthermore, if domestic investors have sufficient access to foreign capital and technology, they will not demonstrate a standout impact on firm performance as compared with domestic investors (Frydman et al., 2007). Moreover, foreign capital also carries with it the latent threat of triggering mass unemployment and emaciating national sovereignty. In addition, it may augment a crowding-out effect, whereby domestic firms are eliminated through fierce competition. Therefore, it is argued that "a privatization plan for Eastern Europe must, on the one hand, provide a clear avenue for the entry of foreign capital and expertise, but, on the other hand, must place this entry in a setting that makes it acceptable from the point of view of the East Europeans' own perception of their interests" (Frydman and Rapaczynski, 1994, p. 16).

Furthermore, two hypotheses have slightly less support than the former three, namely that (4) managers reform their owned companies more intensively than employees would, and (5) domestic institutional investors surpass domestic individual investors in improving the performance of companies in which they have invested. Therefore, the main purpose of the meta-analysis in this paper is to verify whether these five predictions have been empirically proven in the previous research on CEE and FSU countries.

2.2 Specific Factors in Transition Economies

Privatization in CEE and FSU countries was extremely different from that in advanced economies in terms of the broadness and depth of its scope. In other words, the privatization policies in these countries constituted more than just the transfer of ownership from the state to the private sector. It represented a process through which a system of private ownership was reintroduced to the society and, at the corporate level, encompassed the elimination of the command-economy system and the infiltration of the principle of decision making on economic rationality and the profit motive (Frydman and Rapaczynski, 1994; Shleifer and Vishny, 1994). It also involved a process whereby systems and structures, including legal systems, rules, and customs, were reconstructed in a broad-based fashion (Dewatripont and Roland, 1996). In other words, privatization in transition countries was an extremely complex social process that would fundamentally transform the economic system.

The objectives of the privatization policy also became ambiguous. In addition to the original policy goals of establishing a class of private owners and developing firm managers adapted to a market economy, other goals, such as securing tax revenue to fund structural reform and achieving macroeconomic stability, were incorporated into the implementation objectives. Furthermore, the privatization policy was heavily used as a means for reformers to obtain political support from citizens and, conversely, for anti-reformers, such as former communist party officials, to reclaim power (Åslund, 2013). As a result of these ambiguous political intentions, the privatization methods adopted by the governments of CEE and FSU countries exhibited a great deal of diversity; significant differences between these countries in the speed of policy implementation also emerged. Moreover, the foundations for implementing the privatization policies, namely preconditions such as proximity to the EU and maturity as a civic society, were decidedly different among the transition countries. These factors are highly likely to have had some influence on the incentive structure and effort level of company-owning entities. Therefore, in the context of transition economies, it could be extremely important to consider these points when examining the relationship between ownership structure and firm performance. In this subsection, therefore, we will begin by discussing the nature of region-specific factors for transition countries, after which we will explore differences in privatization methods and the speed of policy

implementation. Finally, we will present an additional testable hypothesis for the meta-analysis of this paper.

With regard to region-specific factors for transition economies, numerous researchers have focused their attention on differences between CEE and FSU regions. This is because there would be major differences in terms of the implementation process and results of the privatization policy between CEE and Baltic countries, where the nature of transformation was heavily influenced by the eastern EU enlargement process, and FSU countries, which were not a part of this and followed their own paths to becoming market economies. The results of EBRD assessment, which are presented in **Figure 1** and **Table 1**, clearly illustrate this. In fact, the CEE/Baltic states took advantage of their favorable geopolitical situation, namely their proximity to Western Europe. By establishing legal and other systems that met EU standards, they created a stable foundation for policies, including privatization, aimed at establishing themselves as market economies. They also paved the way for drawing foreign investors, most notably Western multinational companies, into the privatization process. A dramatic improvement in fairness in system design and transparency in the policy decision-making process was also effective in reducing information asymmetry between foreign investors and insiders. Furthermore, in these countries, where civic society had reached a certain level of maturity, the management abilities of company owners were well respected irrespective of differences in their nationalities and other background details. In this regard, Djankov (2014) insisted that "foreign investors and workers became better owners in Eastern Europe than in the former Soviet Union" (p. 191). This may be a result of synergies among these factors.

In contrast, the political environment in the non-Baltic FSU countries was fragile. Unlike CEE countries, they were under no outside pressure to meet EU membership criteria, and, as a result, practices such as property rights were not properly established, and rule changes were very frequent. In that sense, the situation in the FSU countries was very unstable. Furthermore, the system design and implementation process under privatization policies were extremely opaque, and opportunistic, rent-seeking behavior by politicians and bureaucrats, as well as state capture by managers and entrepreneurs, had a huge impact. Because of this, the selection of acquirers for state-owned assets was unlikely to be fair and fully achievable (Frye, 2002; Iwasaki and Suzuki, 2007, 2012). These factors combined with other problems, such as a lack of strategic investors, including foreign investors, and chronic corruption throughout society, probably served to significantly reduce the impact of privatization in many privatized firms in Russia and other FSU countries (Johnson et al., 2000; Radygin, 2014). From this point of view, it is fully understandable that Djankov and Murrell (2002) and Estrin et al. (2009) conducted their systematic reviews of the transition literature with a prime focus on differences between the two regions.

Regarding privatization methods, two points must be given particular attention from the standpoint of the selection of players engaging in corporate restructuring. The first is whether state-owned assets were transferred free of charge or were sold; the second is to what extent, during the process of selecting acquirers, their financial and managerial capabilities were emphasized. Turning once again to **Table 1**, we see that the most favored privatization methods adopted by the majority of CEE and FSU countries were (1) vouchers, (2) MEBOs, and (3) direct sales to strategic investors. As **Table 2** illustrates, these three methods are, from the perspective of the above two points, highly contrasting policy techniques; during the privatization period, these differences probably decisively impacted the ownership structure as well as the incentive structure and effort level of the new owning entities. The evidence for this is as follows:

The voucher system was the most favored privatization method in nine of the 28 CEE and FSU countries. As stated in the previous subsection, the Czech Republic and Russia's policy of placing privatized firms in the hands of the general public has been of interest to a wide range of researchers and has generated numerous empirical studies. In these two countries, the adoption of the voucher system was so heavily promoted because of the need for a policy response to the absolute shortage of domestic capital, on one hand, and populistic political decisions by reformers, on the other. However, there were differences among the countries in terms of the number of vouchers issued and the way they were distributed and used in the voucher systems (Miller, 2013). In the Czech Republic, vouchers (privatization coupons) were mainly held by investment privatization funds. Because they were owned and operated by banks under the direct influence of the government, the state remained the ultimate owner. As a result, public ownership was, in effect, revived (Stark and Bruszt, 1998).[8] In Russia, by contrast, vouchers (privatization checks) with a face value of 10,000 rubles were distributed "equally" to all citizens, and the investment funds hardly fulfilled the role of producing outsider investors at all. Instead, the majority of state-owned firms were basically transferred free of charge to insiders (Boycko et al., 1995; Mizobata, 2005, 2008).

While the implementation methods differed between countries, the policy outcome for all countries that adopted the voucher system was that state-owned firms were transferred free of charge or extremely cheaply to the public or specific groups; This approach meant that hardly any privatized firms secured capable and adequately motivated owners and managers, and the government raised no revenue from the process. Although the voucher system confers political advantages, in that it is easy to obtain the support of the public because the vouchers are provided

[8] Later in the Czech Republic, assets were sold by investment privatization funds to strategic investors, which resulted in numerous examples of firm ownership by foreign banks. Furthermore, another characteristic of this country, though not shown in **Table 1**, is that alongside direct sales to strategic investors, assets were frequently sold via auction.

free of charge, it dilutes the interest in and sense of responsibility for firms among their new owners. As a result, it fails to adequately encourage improvements in firm performance, a drawback that became apparent soon after firms were privatized. “A policy of people’s capitalism could easily fail because shares are sold to lower-income-earners who are not prone to buy assets such as shares” (Bös, 1991, p. 25). Furthermore, and this was especially true in Russia, the transfer of state-owned assets was carried out for reasons other than financial or managerial competence (rather, the main objectives were political or personal gain), so the exclusion of economic entities that were most desirable as corporate reformers from the ownership and management of privatized firms—a kind of “adverse selection effect”—had a wide-ranging and noticeable impact on countries that utilized the voucher system.

MEBOs were the most favored method for privatizing firms in eight transition countries, because these countries were in line with the principle of self-management by workers that had existed in the socialist era and the generally accepted notion that workers should be involved in managing their firms (Thompson and Valsan, 1999). The fact that this system was particularly preferred in the former Yugoslavia is symbolic from this viewpoint (Mencinger, 1996). There is no doubt that MEBOs have a primary focus on transferring state-owned properties to insiders. In that sense, the method neglected the selection of owning entities based on their level of financial and managerial competence. Furthermore, due to the reasons given in Subsection 2.1, the majority of privatized firms failed to avert the adverse effects of insider ownership. However, because MEBOs normally involve the sale of assets, the negative effect on firm restructuring activity stemming from free-of-charge transfers in relation to the voucher system might be avoided. Furthermore, if, due to reasons such as the immaturity of capital markets or inadequate government regulations concerning corporate information disclosure, there is serious information asymmetry between outsider investors and firm managers, insider control can result in a relatively more effective ownership structure. Because of this, it is possible that the adverse impact of using MEBOs on the performance of privatized firms could have been restricted over the short term (Wright et al., 1989).

Direct sales to strategic investors were the most favored method in nine countries. Among them, in three countries—Estonia, Hungary, and Poland—sale by auction was preferred, and the transfer of assets to foreign investors was actively encouraged. Furthermore, in the case of Hungary, even most large manufacturing firms and commercial banks were generously sold off to strategic investors, particularly to Western firms (Iwasaki et al., 2012b). In the case of direct sales, regardless of who the buyer is, the owners are compelled to restructure the firm they have invested in so as to ensure that the total value of the assets acquired and the cash flow generated from the firm’s operations exceeds the purchase price. Direct sales lead to the emergence of

owners and managers whose top priority is to recover the money they have invested and earn additional profits; in macroeconomic terms, they greatly contribute to the creation of a competitive market environment. Furthermore, the positive effects of limiting acquirers of state-owned assets to strategic investors who look for ways to run their companies successfully over the long term are worth emphasizing as an advantage of this method.[9]

Differences in privatization methods aside, there were also big differences in the speed of policy implementation among CEE and FSU countries. In **Table 1**, we see that the average private sector share of GDP in 2010 for the 28 transition countries was 66.6% (median 70%). While this figure was far exceeded in some countries, the percentage was much lower in several countries. In some FSU countries, in particular, government leaders were extremely cautious about instituting large-scale structural reforms; even now, little progress with privatization has been made in these countries.[10]

The view that, if other conditions are held constant, the speed of privatization policy implementation and the effect of firm restructuring should be negatively correlated, has been put forward by Radygin (2014). A privatization policy that prioritizes implementation speed not only

[9] See Gaidar and Chubais (2011). Other policies besides the three favored privatization methods discussed above and the auction method included in **Table 1** were also implemented in CEE and FSU countries. These included loan-for-share privatization, the sale of state-held shares through IPOs, and the restitution of assets to their previous owners. For example, under Russia's loan-for-share privatization scheme, bid winners acquired common stock (giving them a say in the company's management based on the number of shares held during the loan-for-share period) in exchange for lending money to the government at low interest rates. It has been pointed out that, in such cases, the value of the assets was extremely low, even when the political risk was taken into account (Gaidar and Chubais, 2011). It is well known that this loan-for-share privatization scheme triggered the formation of financial and industrial groups with close links between the Russian government and big businessmen known as "oligarchs." Furthermore, in three countries—the Czech Republic, Estonia, and Latvia—the focus was on the restitution of assets to their original owners; in the latter two countries, this policy was closely linked to the acquisition of citizenship, so it was used for political ends. When assets were restored to their previous owners, the longer the socialist system had been in place, the more difficult it was to identify these former owners. In such situations, the policy was sometimes implemented using voucher sets called "restitution certificates." However, countries that utilized the privatization methods mentioned above were specific and extremely limited, and few utilized them as their most-favored method. It is, therefore, difficult to analyze the effect of these policies through a broad international comparison based on the meta-analysis performed in this paper.

[10] **Table 1** shows that this tendency is particularly striking in Belarus, Turkmenistan, and Uzbekistan, which have followed a path toward a market economy that is difficult to describe as embodying either radicalism or gradualism. The transition strategy of these three countries can be described as a "recentralization strategy," which is very different in nature from the strategies of other transition countries that pressed ahead, albeit imperfectly, with transformation under the banner of market capitalism. For details, see Iwasaki (2004), Iwasaki and Suzuki (2007), and Myant and Drahokoupil (2010).

leads to an excessive dispersion of ownership but also delays the formation of capital markets and actually hinders the establishment of a market system. This is because it greatly harms the stability of ownership rights and confidence in markets, which will probably also negatively impact the operating activities of privatized firms. Taking a similar viewpoint, Roland (2000) argued that excessively fast privatization leads to massive asset stripping, which may result in a weak effect of post-privatization ownership on firm performance. These arguments mesh with the views of Arrow (2000), who expressed serious concerns about the side effects of radical transformation.

Nevertheless, the correlation between the speed of policy implementation and the firm restructuring effect could be positive. Because expanding the private sector in conjunction with implementing privatization policy leads to the creation of a competitive market environment, it is possible that owners and managers exposed to severe selection pressure from the market, regardless of the nature of the ownership structure that emerges after privatization, could be stimulated to restructure their firms (Åslund, 2013). Therefore, the faster privatization occurs in a country, the greater the effect on firm performance. Furthermore, hard competition among firms may reduce gaps in the effort level that stem from differences in the attributes of owners more efficiently in countries with high-speed privatization than in countries where privatization policy has stagnated, leading to the preservation of firms that have weak management foundations.[11]

The theoretical arguments in this subsection lead to the three hypotheses from the standpoint of the impacts of specific factors relating to transition economies on firm performance in the post-privatization period: (1) CEE countries do better than FSU countries in enterprise restructuring, (2) the voucher system was the worst privatization method, and (3) direct sales were superior to MEBOs. On the other hand, although the impact of privatization speed is difficult to predict theoretically, a fourth hypothesis could be put forward, namely that (4) the speed of policy implementation is related to the progress in firm restructuring, which is in accordance with the fact that the speed of implementation of other marketization policies is seen to positively correlate with the degree of economic restructuring. In the following sections, therefore, we will perform a meta-analysis of the previous literature to empirically verify our testable hypotheses presented in this section.

3. Procedure of Literature Selection, Overview of Collected Estimates, and Methodology of Meta-Analysis

In this section, we will first describe the procedure for literature selection, next provide an overview of estimates drawn from the selected studies, and then explain the methodology of the

[11] These conflicting opinions concerning the effect of the speed with which privatization policy is implemented on firm restructuring relate to the dispute between radicalists and gradualists as to their perceptions of what is the best transition strategy (Iwasaki and Suzuki, 2016).

meta-analysis performed in this paper.

As a first step toward identifying literature that has empirically examined the impacts of post-privatization ownership structure on firm performance in CEE and FSU countries, we used EconLit and Web of Science databases of academic literature to search for studies published during the 26-year period between 1989 and 2015.[12] When using these electronic databases, we employed as search terms combinations of one of *privatization*, *ownership*, *restructuring*, or *firm performance* and one of *transition economies*, *Central Europe*, *Eastern Europe*, *former Soviet Union*, or the actual name of a CEE or FSU country. This generated around 800 hits. We also tried to obtain as many similar research works as possible that were published during the same period from among the non-duplicated studies cited in the literature retrieved from the databases. Ultimately, we obtained more than 1,000 publications.

Next, we closely examined the contents of these research works and limited our literature list to those containing estimates that could be subjected to meta-analysis in this paper. As a result, we selected a total of 121 studies. These are listed in **Table 3**. As this table shows, studies that empirically investigated the relationship between post-privatization ownership and firm performance had been published continuously during the 20 years from 1996 to 2015, and the first half of the 2000s saw a particularly large wave of empirical research. In fact, during the five years from 2000 to 2004, 55 studies, or 46.6% of all the selected studies, were published. However, the accumulation of research findings continued unabated from 2005 onward, with 30 studies published in the second half of the 2000s and 20 in the first half of the 2010s.

From the above 121 previous studies, we extracted a total of 2,894 estimates (mean: 23.9 per study; median: 13). These estimates came from studies covering 29 countries, meaning that almost the entire CEE and FSU regions are included. There are, however, large differences among the countries in the frequency of subjection to empirical analysis. Actually, according to **Table 3**, 36 and 31 studies dealt with the Czech Republic and Russia, respectively. These were followed by studies of Hungary (23), Poland (22), Romania (21), Estonia (20), Ukraine (18), Slovenia (17), Bulgaria (15), and Slovakia (11), with only 10 or fewer studies addressing each of the remaining 19 countries. Regarding the industries subject to research, previous studies can be roughly divided into two categories, with 65 studies covering the mining and manufacturing industry and 57 covering a broad range of industries. Just six studies focused on the service sector. If the 121 studies are taken as a whole, the estimation period covered a period of 27 years from 1985 to 2011, with a mean estimation period for the collected estimates of 4.16 years (median: 4 years).

The variables of firm performance (i.e., dependent variables) used in the studies listed in **Table 3** can be classified into five types: (1) sales/output indicators; (2) efficiency indicators such

[12] The final literature search was performed in January 2016.

as ROA; (3) productivity indicators, including labor productivity or total factor productivity; (4) firm value indicators represented by stock price and Tobin's Q; and (5) other firm performance indicators. Each type as a percentage of the total collected estimates is 26.6% (771 estimates), 30.8% (890), 24.3% (703), 12.8% (369), and 5.6% (161), respectively.[13]

With regard to ownership variables (i.e., independent variables), there are 15 types, ranging from a variable for unspecified government to that for employees. We hereinafter refer to these 15 variable types collectively as the "basic category of ownership variable." **Figure 2** gives a breakdown of the collected estimates in accordance with this category.[14] Furthermore, corresponding to the discussion in the previous section, we also employ a more aggregate category: namely, we condensed the three variable types from the unspecified government ownership variable to the regional/local government ownership variable, the eight types from the unspecified domestic outsider investor ownership variable to the other domestic non-financial company ownership variable, and the three types from the unspecified insider ownership variable to the employee ownership variable into broader variable types called the "state ownership variable," the "all domestic outsider investor ownership variable," and the "all insider ownership variable," respectively, and collectively call these three variable types plus the foreign investor variable the "aggregated category of ownership variable" in the remainder of the paper.

Figure 3 puts the collected estimates into these four aggregated variable types. In this paper, we will mainly rely on the aggregated category to conduct a comparative meta-analysis of the effect size and statistical significance of owning entities with different attributes and to assess the presence and degree of publication selection bias in the extant literature. However, we will also utilize the basic category depending on the need for hypothesis verification.

Next we will provide a brief description of the basic framework and procedures for the meta-analysis employing the aforementioned collected estimates. In this study, we employ the partial correlation coefficient (PCC) and the *t* value to synthesize the collected estimates. The PCC is a measure of the association of a dependent variable and the independent variable in question when other variables are held constant. The PCC is calculated in the following equation:

[13] In this paper, estimates of variables related to restructuring activity such as reorganization and capital investment are not used at all in the meta-analysis; rather, we focus on firm performance in the narrow sense, i.e., the efficiency and profitability of management and production activities.

[14] In the case of some of the estimates classified as the variable for ownership by domestic outsider investors, there is a possibility of contamination by the effect of ownership by foreign investors; however, we purposely classified as such those estimates for which it was clear that the objective was to investigate the effect of ownership by domestic outside investors.

$$r_k = \frac{t_k}{\sqrt{t_k^2 + df_k}}, \quad k = 1, 2, \ldots, K, (1)$$

where t_k and df_k denote the t value and the degree of freedom of the k-th estimate, respectively, while K denotes the total number of collected estimates. We synthesize PCCs using the meta fixed-effect model and the meta random-effects model, and according to the homogeneity test, we adopt the synthesized effect size of one of these two models as the reference value.

The t values are combined using the following equation:

$$\overline{T_w} = \sum_{k=1}^{K} w_k t_k \Big/ \sqrt{\sum_{k=1}^{K} w_k^2} \quad \sim \quad N(0,1). \quad (2)$$

Here, w_k is the weight assigned to the t value of the k-th estimate. For the weight w_k in Eq. (2), we utilize a 10-point scale to mirror the quality level of each relevant study $(1 \leq w_k \leq 10)$.[15] Moreover, we report not only the combined t value $\overline{T_w}$ weighted by the quality level of the study but also the unweighted combined t value $\overline{T_u}$. As a supplemental statistic for evaluating the reliability of the above-mentioned combined t value, we also report Rosenthal's fail-safe N (*fsN*).

Following the synthesis of collected estimates, we conduct MRA to explore the factors causing heterogeneity between selected studies. To this end, we estimate the meta-regression model:

$$y_k = \beta_0 + \sum_{n=1}^{N} \beta_n x_{kn} + e_k, \quad k = 1, 2, \cdots, K, \quad (3)$$

where y_k is the PCC or the t value of the k-th estimate; x_{kn} denotes a meta-independent variable that captures relevant characteristics of an empirical study and explains its systematic variation from other empirical results in the literature; β_n denotes the meta-regression coefficient to be estimated; and e_k is the meta-regression disturbance term. To check the statistical robustness of coefficient β_n, we perform an MRA using the following seven estimators: the cluster-robust ordinary least squares (OLS) estimator, which clusters the collected estimates by study and computes robust standard errors; the cluster-robust weighted least squares (WLS) estimator, which uses either the above-mentioned quality level of the study, the number of observations (*N*), or the inverse of the standard error (1/*SE*) as an analytical weight; the multilevel mixed effects restricted maximum likelihood (RML) estimator; and the cluster-robust unbalanced panel estimator (i.e., fixed-effects estimator and random-effects estimator).

Testing for publication selection bias is a unique and important issue for meta-analysis. In this paper, we examine this problem by using the funnel plot and the Galbraith plot as well as by

[15] For more details on the method of evaluating the quality level of the study, see the **Appendix**.

estimating a meta-regression model that is designed especially for this purpose. If the funnel plot is not bilaterally symmetrical but is deflected to one side, then an arbitrary manipulation of the study area in question is suspected, in the sense that estimates in favor of a specific conclusion (i.e., estimates with an expected sign) are more frequently published (type I publication selection bias). Meanwhile, the Galbraith plot is used for testing another arbitrary manipulation in the sense that estimates with higher statistical significance are more frequently published, irrespective of their sign (type II publication selection bias). In general, the statistic, $|(\text{the } k-\text{th estimate} - \text{the true effect})/SE_k|$, should not exceed the critical value of ±1.96 by more than 5% of the total estimates. In other words, when the true effect does not exist and there is no publication selection, the reported *t* values should vary randomly around zero, and 95% of them should be within the range of ±1.96. The Galbraith plot tests whether the above relationship can be observed in the statistical significance of the collected estimates and thereby identifies the presence of type II publication selection bias.

In addition to the above two scatter plots, we also report estimates of the meta-regression models, which have been developed to examine in a more rigorous manner the two types of publication selection bias and the presence of the true effect.

We can test for type I publication selection bias by regressing the *t* value of the *k*-th estimate on the inverse of the standard error (1/*SE*) using the following equation:

$$t_k = \beta_0 + \beta_1(1/SE_k) + v_k, \quad (4)$$

thereby testing the null hypothesis that the intercept term β_0 is equal to zero. In Eq. (4), v_k is the error term. When the intercept term β_0 is statistically significantly different from zero, we can interpret that the distribution of the effect sizes is asymmetric. For this reason, this test is called the funnel-asymmetry test (FAT). Meanwhile, type II publication selection bias can be tested by estimating the next equation, where the left side of Eq. (4) is replaced with the absolute *t* value:

$$|t_k| = \beta_0 + \beta_1(1/SE_k) + v_k, \quad (5)$$

thereby testing the null hypothesis of $\beta_0 = 0$ in the same way as the FAT.

Even if there is a publication selection bias, a genuine effect may exist in the available empirical evidence. Stanley and Doucouliagos (2012) propose examining this possibility by testing the null hypothesis that the coefficient β_1 is equal to zero in Eq. (4). The rejection of the null hypothesis implies the presence of a genuine effect. They call this test the precision-effect test (PET). Moreover, they state that an estimate of the publication selection bias–adjusted effect size can be obtained by estimating the following equation that has no intercept:

$$t_k = \beta_0 SE_k + \beta_1(1/SE_k) + v_k, \quad (6)$$

thereby obtaining the coefficient β_1. This means that if the null hypothesis of $\beta_1 = 0$ is rejected,

then the non-zero effect does actually exist in the literature, and the coefficient β_1 can be regarded as its estimate. Stanley and Doucouliagos (2012) call this procedure the precision-effect estimate with standard error (PEESE) approach. To test the robustness of the regression coefficient, we estimate Eqs. (4) to (6) above using not only the OLS estimator but also the cluster-robust OLS estimator and the unbalanced panel estimator,[16] both of which treat possible heterogeneity among the studies.

As mentioned above, we basically follow the FAT-PET-PEESE approach advocated by Stanley and Doucouliagos (2012) as the test procedures for publication selection. However, we also include the test of type II publication selection bias using Eq. (5) because, as repeatedly verified in Iwasaki and Tokunaga (2014, 2016) and Tokunaga and Iwasaki (2017), this kind of bias is very likely in the literature of transition economies.

4. Meta-Synthesis of Collected Estimates

Figure 4 presents frequency distributions of the PCC (r) and t values of 2894 estimates collected from the studies listed in **Table 3** by aggregated category of ownership variable. **Figure 5** shows their kernel density estimations.

As Panel (a) of **Figure 4** illustrates, for all of the ownership variable types, it is common for the frequency of the PCC to be highest at the class with the lower limit of 0.0. However, there are certain differences in the dispersion in the positive/negative directions. In fact, while the share of positive estimates in the total collected estimates is 51.1% (305 estimates) for the state ownership variable, those for the all domestic outsider investor variable, the foreign investor ownership variable, and the all insider ownership variable are 66.3% (627), 73.3% (641), and 71.5% (341), respectively. Consequently, as shown in Panel (a) of **Figure 5**, in terms of the degree of deviation in the positive direction, all three variable types of private entities surpass the state ownership variable.

Concerning t values, as Panel (b) of **Figure 4** and Panel (b) of **Figure 5** show, the mode of the collected estimates is 2.0 for the foreign investor ownership variable and 0.0 for the other three types. The distributions of all of the ownership variable types exhibit a high degree of kurtosis. A distinctive feature observed here is the dominance of the foreign investor ownership variable in terms of producing statistically significant and positive estimates as a percentage of all estimates. Actually, in the case of the foreign investor ownership variable, empirical results

[16] To estimate Eqs. (4) and (5), we use either the cluster-robust random-effects estimator or the cluster-robust fixed-effects estimator according to the results of the Hausman test of the random-effects assumption. With regard to Eq. (6), which does not have an intercept term, we report the random-effects model estimated by the maximum likelihood method.

with a *t* value of 2.0 or higher account for 44.7% (391 estimates) of the 874 collected estimates. In contrast, the figures for the state ownership variable, the all domestic outsider investor variable, and the all insider ownership variable are just 11.7% (70), 19.7% (186), and 28.1% (134), respectively. This finding meshes with the intuition of researchers that the positive effect of foreign participation on enterprise restructuring tends to be empirically detected more easily than that of domestic owners.

Figure 6 plots the collected estimates in chronological order. As shown in this figure, the PCC and *t* values of the state ownership variable, the foreign investor ownership variable, and the all insider ownership variable exhibit a downward trend along the time axis. In fact, according to the approximate straight lines drawn in the figure, with each one-year increase in the average estimation period, the PCC drops by 0.0045 for the state ownership variable, 0.0048 for the foreign investor ownership variable, and 0.0069 for the all insider ownership variable, with statistical significance at the 1% level. The *t* values also decline significantly by 0.203, 0.430, and 0.106, respectively. In contrast, the all domestic outsider investor ownership variable exhibits an upward trend as the period of time increases. Actually, with each one-year increment in the average estimation period, the PCC climbs by 0.0028, while the *t* value rises by 0.0737. Both coefficients are significant at the 1% level. These results indicate that the relative superiority/inferiority of different owners as corporate restructurers can change depending on the period of time covered by a study.

Table 4 presents the results from the meta-synthesis of the collected estimates. This table shows results based not only on the aggregated category of ownership variable but also on the basic category mentioned in the previous section. As reported in Column (a) of this table, for both category types, the homogeneity test rejects the null hypothesis in every case. Hence we adopt the estimate $\overline{R_r}$ from the random-effects model as a reference value. Meanwhile, Column (b) of the same table demonstrates the combination of *t* values. The result shows that, in 16 of the 18 cases, the combined *t* value $\overline{T_w}$ weighted for the quality level of the study is much lower than the unconditionally combined *t* value $\overline{T_u}$. In other words, the statistical significance of the empirical findings depends greatly on the research quality and/or its background study conditions. Therefore, in **Figure 7**, we focus on the PCCs synthesized by the random-effects model and the weighted combined *t* values to compare the different ownership variable types. As indicated in this figure, some results of the meta-synthesis are not statistically significantly different from zero. Thus we should note that it is impossible to make a direct comparison between these insignificant results and significant ones.

The major findings from **Table 4** and **Figure 7** can be summarized in four points: First, compared with the state, the private sector has, on the whole, made a greater contribution to

improved firm performance in the post-privatization period. However, with respect to effect size, the collected estimates employing the unspecified domestic financial institution variable, and with respect to statistical significance, the collected estimates employing the unspecified domestic financial institution ownership variable, the domestic bank ownership variable, and the employee ownership variable exhibit results that buck this overall trend. Second, the empirical assessment of domestic outsider investors reveals that, contrary to our predictions, they are generally inferior to insiders. Third, while the effect of foreign ownership on firm performance is far more statistically significant than that of the state or other private entity ownership, there is hardly any difference in comparison with insiders with respect to effect size. Fourth, in terms of both effect size and statistical significance, company managers are seen to be clearly superior to employees, which supports our hypothesis.

As discussed above, while the results of meta-synthesis reported in this section provide supporting evidence for the hypotheses of the superiority of the private sector over the state as a firm owning entity and that company managers outperform employees, they do not back up our theoretical predictions concerning the relative superiority of certain private company owners over others. As the chronological order of the collected estimates displayed in **Figure 6** and the remarkable difference between the weighted and unconditionally combined *t* values reported in Column (b) of **Table 4** indicate, it is highly likely that the empirical results of the previous literature were heavily affected by the research conditions and quality level of the study. Accordingly, in the next section, we will perform a meta-regression analysis to test our hypotheses in a more rigorous manner.

5. Meta-Regression Analysis of Heterogeneity among Studies: Baseline Estimation

In this section, we will perform an MRA to examine whether the results of the meta-synthesis reported in the previous section can be reproduced even when other research conditions are simultaneously controlled for. To this end, we introduce the PCC or the *t* value into the left-hand side of the regression equation (3), while on its right-hand side, we adopt a series of meta-independent variables designed to capture not only the differences in the ownership variable type,[17] target countries and industries, estimation period, and benchmark index of firm performance variable that we mentioned in Section 3 but also the differences in the type and source of data used, estimator, equation type, presence of treatment for selection bias of privatized

[17] Interaction terms with an ownership variable are not included at all in the collected estimates because they do not indicate any pure effect of the ownership structure itself. However, in the course of MRA, we will examine how the simultaneous estimation with an interaction term(s) affects the estimates of the ownership variable.

firms, presence of various control variables that would significantly affect estimation results, and degrees of freedom and quality of the study. The names, definitions, and descriptive statistics of these meta-independent variables are shown in **Table 5**.

To begin with, we conducted estimations using the aggregated category of ownership variable. **Table 6** shows the results. As this table illustrates, the estimates are sensitive to the choice of the estimator. Therefore, hereinafter, we will interpret the regression results under the assumption that the meta-independent variables that are statistically significant and have the same sign in at least four of seven models constitute statistically robust estimation results.

According to the estimates shown in Panel (a) of **Table 6**, for which the dependent variable is the PCC, collected estimates reporting a statistically significantly larger positive effect size than the state ownership variable are limited to the foreign investor ownership variable. In fact, a meta-independent variable which capture estimates of the foreign investor ownership variable by a value of 1 is positive at the 1% significance level for all seven models, indicating that it is a highly robust estimate. Put another way, if other research conditions are held constant, the PCC of the foreign investor ownership variable is, with a range of 0.0406 to 0.0730, higher than that of the state ownership variable. In contrast, the meta-independent variable, which takes a value of 1 for estimates of the all domestic outsider investor ownership variable and the all insider ownership variable, shows a positive sign for almost all of the models, but the vast majority are insignificant.

According to Panel (b) of the same table that shows the estimation results with the *t* value on the left-hand side in equation (3), once again, the meta-independent variable of the foreign investor ownership variable is positive and significant at the 1% level in all seven models. In other words, the statistical certainty of the effect of foreign ownership on firm performance is higher than that of state ownership, with a range of 1.3910 to 7.8449. In contrast, while the coefficient of the all domestic outsider investor ownership variable and the all insider ownership variable is positive for all seven models, only two models exhibit statistically significant estimates. Therefore, it is difficult to assert that there is a remarkable difference in statistical significance between the ownership effect of the state and domestic private owners.

Keeping the above findings in mind, we next performed an estimation using the basic category of ownership variable. The results are reported in **Table 7**. Due to space limitations, we have omitted the estimates for other research conditions and the intercept, but otherwise the table is configured in exactly the same way as **Table 6**.

According to Panel (a) of **Table 7**, in the case of the MRA with the PCC as the dependent variable, the meta-independent variable, which assigns a value of 1 to estimates of the unspecified domestic outsider investor variable and the other domestic non-financial company variable, shows a significant and positive sign in five or more models in addition to the foreign investor ownership

variable. Moreover, the estimation results in Panel (b) of the same table, which take the *t* value as the dependent variable, exhibit significant and positive coefficients in five or more models for the other non-financial company ownership variable and the unspecified insider ownership variable as well as the foreign investor ownership variable.

The above results suggest that, with regard to the estimation results based on the aggregated category of ownership variable shown in **Table 6**, in which the meta-regression coefficient of the all domestic outsider investor variable is almost insignificant, the previous studies that empirically examined the impact on firm performance of six owner types from domestic outsider individual investors to domestic company groups and holdings, on the whole, failed to detect an economically meaningful and statistically significant ownership effect. Meanwhile, as can be seen from **Figure 7**, the insignificant estimates of the all insider ownership variable in **Table 6** are mainly due to the ownership effect of employee owners being extremely small.

With respect to the influence of other research conditions and quality level of the study on empirical results in the extant literature, **Table 6** shows that very few of the meta-independent variables for these aspects were estimated with a relatively robust coefficient. In other words, from the viewpoint of effect size, the selection of the estimator and the degrees of freedom can provide a systematic explanation of the heterogeneity between studies. From a statistical significance standpoint, five decisive factors are behind the differences between studies, including: the presence of an interaction term, the first year of the estimation period, the selection of the estimator, control for industry fixed effects, and differences in the countries studied. Other research conditions such as the target industries, firm performance variable type, type and source of data, equation type, treatment for selection bias, and quality level of the study do not have systematic influence on the empirical findings reported by previous research.

To sum up, the results of the baseline estimation of equation (3) reported in **Tables 6** and **7** prove only the superiority of foreign investors compared with state or domestic private owners and, consequently, do not provide comprehensive backup for the entire series of hypotheses concerning differences between ownership types presented in Section 2, as in the case of meta-synthesis conducted in the previous section. One of the major reasons for these disappointing results is that ownership variables designed to verify the idiosyncrasies of specific countries/regions and privatization policies, the domestic outsider ownership variables in particular, did not deliver expected results in many extant works. Accordingly, in the next section, we will attempt to estimate an extended model that takes the idiosyncrasies of transition countries and privatization policies into account to examine whether certain order lies within the opaqueness seen in the empirical results of the previous literature.

6. Meta-Regression Analysis Concerning the Idiosyncrasies of Transition Economies

In this section, with reference to the discussion in Subsection 2.2 and **Table 1**, we will perform an MRA focusing on the specific aspects of transition countries and privatization policies, namely (1) the idiosyncrasies of CEE countries compared with FSU countries, (2) the idiosyncrasies of countries that favored privatization using the voucher system, (3) the idiosyncrasies of countries that favored MEBOs, and (4) the idiosyncrasies of countries that favored direct sales to strategic investors, as well as (5) differences in firm privatization speed. More concretely, we will classify the countries studied based on the above five aspects and estimate an interaction term between an ownership variable type and the proportion of the transition country group at issue in the total collected estimates. The discussion that follows will focus mainly on estimation results of the extended model using the aggregated category of ownership variable, but we also refer from time to time to the estimates based on the basic category, which are reported in the supplements.

6.1 Idiosyncrasies of CEE Countries

Table 8 presents the results from estimation of the extended model, which introduced the proportion of CEE country observations and its interaction term with the meta-independent variable for each ownership variable type into the right-hand side of the regression equation. Due to space constraints, we left some estimates out, but as was the case with **Table 7**, meta-independent variables that capture various research conditions are simultaneously estimated.[18] As can be seen from Panel (a) of the table, while the variable of CEE countries is estimated to be significant and positive in five of the seven models, the interaction term with the foreign investor ownership variable is significant and negative in six models. This result hints at the possibility that while empirical studies on the CEE countries have, on the whole, reported a greater effect size than have those on the FSU countries, the effect size of foreign ownership is significantly smaller than it is for the FSU countries and that the relative superiority in the CEE countries of foreign investors over the state and domestic private owners is therefore not as conspicuous as it is in the FSU countries.

According to Panel (b) of **Table 8**, if the idiosyncrasies of the CEE countries are controlled for, the ownership variable types are estimated to be relatively robust and positive. In other words, studies on the CEE countries might not produce supporting evidence for theoretical predictions regarding the effect on firm performance of ownership by domestic private owners and foreign investors as opposed to state ownership as was done in studies on the FSU countries from the standpoint of statistical significance.

[18] Needless to say, the proportion of sample firms in observations for each of the countries is excluded from the estimation.

According to the estimation results of the extended model using the basic category of ownership variable (**Supplement 1**), marked differences between the CEE countries and the FSU countries in terms of both effect size and statistical significance are seen, particularly in the case of estimates for domestic non-bank financial institutions and firm managers. The results also confirm that studies on the FSU countries deliver a more positive empirical assessment of the impact of these two ownership types on firm performance. Moreover, from the point of view of statistical significance, a similar tendency is seen for the ownership effect of domestic company groups and holdings.

6.2 Idiosyncrasies of Countries That Favored Privatization Using the Voucher System

Table 9 shows meta-regression models designed to identify the idiosyncrasies of countries that favored voucher privatization. This result presents discoveries that are particularly worthy of attention among the empirical findings in this paper. It means that if distinctive effects on the empirical results for voucher privatization countries are dissociated by the interaction term, the meta-independent variables of ownership variable types, regardless of the difference in dependent variables, are given a significant and positive coefficient in five or more of the seven models. In addition, compared with the baseline estimation in **Table 6**, the coefficient of the all domestic outsider investor ownership variable is estimated to be much higher, and for all the models under which significant estimates are obtained, it surpasses the all insider ownership variable. Moreover, with six models, it also exceeds even the coefficient of the foreign investor ownership variable. Meanwhile, the interaction term between the variable of voucher privatization countries and the all domestic outsider investor variable is significantly negative in five models in Panels (a) and (b) of **Table 9**.

The above results strongly suggest that studies covering transition countries that adopted a voucher system as the primary method of enterprise privatization include a much larger number of empirical results that do not support the theoretical predictions concerning the interrelationship of different owning entities than do studies of countries that did not favor voucher privatization. One of the reasons these two study types generated such highly asymmetrical empirical findings is that the performance of firms owned by domestic outsider investors fell far short of expectations in voucher privatization countries. In that sense, we conjecture that the indiscriminate transfer of state assets free of charge did not adequately inspire these owners to make an effort to restructure the privatized firms.

In addition to the above, the estimation using the basic category of ownership variable (**Supplement 2**) makes it clear that the estimates for the unspecified domestic institutional investor ownership variable and the unspecified domestic financial institution ownership variable in the studies on voucher privatization countries are far inferior to those in the studies on other

countries in terms of both effect size and statistical significance. These results also constitute a noteworthy finding to elucidate the reasons why domestic private company owners might not have brought a remarkable improvement in firm performance.

6.3 Idiosyncrasies of Countries That Favored MEBOs

Estimations that treat the idiosyncrasies of transition countries that favored MEBOs are represented in **Table 10**. In this table, the interaction terms do not show any robust coefficients, regardless of differences in the dependent variable. This result implies that the policy to encourage managers or rank-and-file employees to buy out their own companies as the most favored privatization method did not lead to marked differences in the empirical results of policy effects compared with transition countries that emphasized other privatization methods. However, in Panel (b) of the table, the variable of a MEBO privatization country itself is estimated to be significant and positive in four models, suggesting that the statistical significance of estimates reported in studies on countries that made MEBOs a priority is higher on average than those in studies of other transition countries.

According to estimation results that employed the basic category of ownership variable (**Supplement 3**), the interaction term with the unspecified domestic financial institution ownership variable and the domestic bank ownership variable shows a robust and positive coefficient for both effect size and statistical significance, while the interaction term with the domestic institutional investor variable does so for statistical significance. This result hints that domestic institutional investors in MEBO-favoring countries, which were mainly financial institutions, had a more favorable effect than those in other transition countries on the restructuring of privatized firms that they owned. In contrast, the interaction term with the employee ownership variable is given a negative coefficient in six and five models for effect size and statistical significance, respectively, which clearly illustrates that employee insider ownership is harmful. This is an interesting finding in terms of understanding the idiosyncrasies of the MEBO method.

6.4 Idiosyncrasies of Countries That Favored Direct Sales

The possibility that direct sales to strategic investors was an extremely effective privatization method, particularly for actualizing the effect of domestic outsider ownership on firm performance, is strongly suggested in **Table 11**. This is because in Panels (a) and (b) of this table, the interaction term between the all domestic outsider investor variable and the variable of direct-sale privatization countries is estimated with a significant and positive sign in five models. On the other hand, the interaction term with the foreign investor ownership variable is insignificant for all of the models except one. These results imply that in countries that executed direct sales as the

primary method of privatization, the differences between foreign investors and domestic outsider investors in terms of the ownership effect on firm performance were much smaller than in other transition countries. The selection of acquirers of state assets through strict screening in countries such as Hungary and Poland may have greatly contributed to the discovery of domestic investors whose competence is on a par with that of foreign ones.

With respect to the estimation that utilizes the basic category of ownership variable (**Supplement 4**), in five or more models that take the PCC as the dependent variable, the interaction term of the variable of direct-sale privatization countries with the domestic outsider individual investor ownership variable, the unspecified domestic institutional investor ownership variable, and the domestic non-bank financial institution variable is given a significant and positive coefficient. Meanwhile, in the case of the estimation with the *t* value on the left side, the unspecified domestic financial institution ownership variable, the domestic non-bank financial institution ownership variable, the unspecified insider ownership variable, and the employee ownership variable show a significant and positive estimate. These results indicate that domestic institutional investors and insiders are more active restructurers in direct sales–favoring countries than other transition countries in consistent with the above discussion

6.5 Differences in Privatization Policy Implementation Speed

To investigate the impact of the privatization policy implementation speed on the empirical results of previous studies, we sorted the transition countries into upper and lower groups on the basis of the medium value of 70% in terms of the private sector share in GDP in 2010 reported in **Table 1**, then estimated the variable of slow-speed privatization countries and its interaction terms with the ownership variable types.

Table 12 shows the results. In Panel (a) of this table, the variable of slow-speed privatization countries is estimated with a significant and negative coefficient in six of the seven models. On the other hand, the interaction term with the foreign investor ownership variable is given a significant and negative estimate in six models. In other words, the effect size reported in studies of countries in which progress with privatization tended to be slow is, with a range of 0.0258 to 0.0705, lower than that reported in studies on rapidly reforming countries. At the same time, it is also confirmed that, in the slow-speed privatization countries, the gap in ownership effect between foreign investors and other owning entities is much greater. As discussed in Subsection 2.2, in countries where enterprise privatization progressed rapidly, factors such as more intense interfirm competition and the crowding out of poorly performing domestic firms from the market may have led to a decline in the relative superiority of foreign ownership.

According to the estimation results using the basic category of ownership variable (**Supplement 5**), in the meta-regression models having the PCC as the dependent variable, the

interaction term of the variable of slow-speed privatization countries with the unspecified domestic financial institution ownership variable, the domestic non-bank financial institution ownership variable, and the managerial ownership variable is estimated to be significant and positive in four or more models. Meanwhile, in the models that take the *t* value on the left-hand side, the same is true for the domestic non-bank financial institution ownership variable, the domestic company groups and holdings ownership variable, and the managerial ownership variable. These results imply the relative superiority of domestic institutional investors and firm managers as corporate owners in slowly reforming countries.[19]

7. Assessment of Publication Selection Bias

As the final step of our meta-analysis, in this section we will test the publication selection bias and the presence of genuine empirical evidence in this research field.

Figure 8 shows funnel plots for the four ownership variable types of the aggregated category. The plots employ the PCCs and inverse standard errors of the collected estimates. As explained in Section 3, the funnel plot is used to investigate type I publication selection bias. According to statistical theory, if this type of publication selection bias is absent, the effect sizes reported by independent studies should be distributed randomly and symmetrically around the true effect. Furthermore, the dispersion of the effect size is predicted to be negatively correlated with the precision of the estimate. Therefore, the shape of this scatter plot should look like an inverted funnel.

With the above in mind, an examination of the funnel plots in **Figure 8** reveals that even if the true effect is assumed to be zero, and even if the mean of the most precise 10% of estimates, as denoted by the solid line in the figure, is regarded as the approximation value of the true effect, it is difficult to assert that the data matches the prediction from statistical theory, namely that for all ownership variable types, the collected estimates are not distributed with a bilateral symmetry and in a triangular shape.[20] The asymmetry is particularly marked in the case of the foreign

[19] To deal with estimates derived from studies of multiple countries, we employed the proportion of the subsample group. As indicated in **Table 3**, however, the majority of the literature subject to meta-analysis is made up of single-country studies; hence, in most cases, this variable takes a value of 1. Even if multiple-country studies are completely excluded and a binary dummy variable for the countries concerned is used in place of the proportion of the subsample group, the conclusions drawn are not all that different from the meta-regression results in this section. Furthermore, the simultaneous estimation of all the intercepted variables in question shows similar results to those reported in **Tables 8** to **12**. We thank Robert J. Johnston for his suggestion on robustness check.

[20] The method for assuming the mean of the most precise 10% of estimates is the approximate value of the true effect is along the lines of Stanley (2005).

investor ownership variable.

Let us assume that the true effect is zero. As mentioned in Section 4, the ratio of positive to negative PCCs is 306:291 for the state ownership variable, 627:319 for the all domestic outsider investor ownership variable, 641:233 for the foreign investor ownership variable, and 341:136 for the all insider ownership variable. Therefore, the null hypothesis that the ratio of positive and negative values is the same is rejected at the 1% level for the three variable types other than the state ownership variable. Furthermore, when the true effect is assumed to be close to the mean of the most precise 10% of estimates and the collected estimates are divided by two, with this value being the threshold, the ratio for each ownership variable type becomes 244:353, 519:427, 402:472, and 188:289, respectively. Hence the null hypothesis that the ratio of the above-mean values and the below-mean values is equal is rejected for all four variable types. These results therefore suggest that regardless of differences in the ownership variable types, it is highly probable that type I publication selection bias is present.

Figure 9 displays Galbraith plots using the *t* values and the inverse of standard errors of the collected estimates. The figure strongly suggests that type II publication selection bias is present for all of the ownership variable types. In fact, the percentage of collected estimates for which the *t* value is within the range of ±1.96 or the two-sided critical values of the 5% significance level is 75.7% for the state ownership variable, 73.4% for the all domestic outsider investor ownership variable, 48.0% for the foreign investor ownership variable, and 66.0% for the all insider ownership variable. Accordingly, the null hypothesis that the ratio is 95% is strongly rejected for all variable types. Even if we assume that the mean of the most precise 10% of estimates is the true effect, the percentage of estimates where the statistic $|(k\text{th estimation result} - \text{true effect})/SE_k|$ does not exceed the threshold of 1.96 accounts for 70.5%, 75.2%, 48.9%, and 73.%, respectively, and thus the null hypothesis is rejected once again for all of the variable types. These results indicate that, irrespective of the differences in variable types, the likelihood of type II publication selection bias is considerably high in this study area.

Table 13 reports the estimation results of equations (4), (5), and (6), which are designed to test for two types of publication selection bias and the presence of genuine empirical evidence. If we employ as a judgment criterion the question of whether the null hypothesis is rejected for at least two out of three models for each variable type, then Panel (a) of this table shows that the FAT strongly rejects the null hypothesis for the foreign investor ownership variable, the funnel plot for which exhibits marked asymmetrical distribution. Hence, type I publication selection bias is strongly suspected. In the case of the remaining three types of ownership variables, the null hypothesis is not rejected, suggesting that the effect of type I publication selection bias is slight. On the other hand, the results of the type II publication selection bias test shown in Panel (b) of

the table strongly reject the null hypothesis for all of the ownership variable types, which backs up the impression obtained from the Galbraith plots.

Further, according to the results of the PET reported in Panel (a) of **Table 13**, we find that the null hypothesis is rejected except for the state ownership variable. It is therefore highly likely that in the case of three private ownership variables, the collected estimates contain genuine evidence beyond any publication selection bias. In fact, Panel (c) of the same table shows that the PEESE approach resulted in a strong rejection of the null hypothesis for these three variable types, and judging from the coefficient of β_1 in equation (6), we can ascertain that the true effect of all of the private ownership variables is significantly positive.

Table 14, in addition to a summary of the above test results based on the aggregated category of ownership variable, also presents a summary of results based on the basic category. As this table shows, the presence of type I publication selection bias is confirmed for five of the 18 cases, while the type II publication selection bias is detected in 15 of the 18 cases. At the same time, according to the PET and PEESE results, a publication selection bias–adjusted effect size is obtained in 10 of the 18 cases. These outcomes prove a reasonable success in identifying the real impacts of post-privatization ownership structure on the performance of privatized enterprises in the formerly socialist transition economies.

8. Conclusions

The privatization of state-owned enterprises in CEE and FSU countries constituted a social experiment on a scale never seen before in the economic history of the world. Studying the design of the privatization methods, their implementation process, and their outcomes has been a key task for researchers of transition economies. As a consequence of their great efforts over the past quarter century, the study of privatization has expanded to such an extent that it probably boasts more studies than any other area in the field of transition economics. This series of research works provides valuable and plentiful insights not only for understanding the formerly socialist transition economies but also from the standpoint of corporate finance and organizational economics.

This trend has also produced numerous studies that empirically examined the relationship between post-privatization ownership and firm performance. Reflecting progress in the implementation of privatization policies in the CEE and FSU regions, the number of this kind of work peaked in the first half of the 2000s, although such studies have steadily continued to be published until the present day. The accumulation of empirical evidence has gradually come to satisfy the thirst of researchers for an answer to the question of what sort of owners are most desirable for the restructuring of formerly state-owned firms. Nevertheless, it remains extremely

difficult to gauge the big picture of the empirical findings revealed in the existing literature. This is because the number of studies is so large and because their empirical results are too mixed to determine whether the experiences in transition economies support the standard theory regarding the interrelationship between different types of corporate ownership.

To tackle this problem, in this paper, we employed a total of 2894 estimates drawn from 121 relevant studies published from 1996–2015 to perform a meta-analysis of the impact of post-privatization ownership on firm performance. The collected estimates encompass almost all CEE and FSU countries, and their estimation period covers 27 years from 1985–2011. Therefore, they are ideal for conducting a comprehensive assessment of the study of CEE and FSU economies in the transition period.

Findings from the meta-synthesis of the collected estimates performed in Section 4 provided support for the theoretical predictions concerning the superiority of the private sector over the state and the inefficiency of employees as compared with firm managers as owners of their firms. However, it did not offer full support for predictions concerning interactions between private entities, including foreign investors. Meanwhile, an MRA that took account of the heterogeneity of literature in Section 5 proved that, as compared with other corporate owners, the size of the effect and the statistical significance are much higher for foreign investors, corresponding with our argument. Nevertheless, as was the case with the synthesis results in Section 4, the MRA results did not provide comprehensive proof of the series of hypotheses proposed in Section 2. All of these results may reflect the high degree of complexity of privatization policies in CEE and FSU countries.

In Section 6, with the aim of identifying factors that have caused disorderliness in this research field, we attempted to estimate an extended model that explicitly controlled for the idiosyncrasies of transition economies. The first noteworthy finding from this analysis was that the effect size and statistical significance of the foreign investors as compared with those of state and domestic private owners were much larger in studies of FSU countries than in those of CEE countries, suggesting that foreign investors operating in FSU countries behaved, when compared with their domestic counterparts, as relatively superior company owners to a greater extent than they did in CEE countries. Second, because meta-independent variables that exclude the influence of the idiosyncrasies of voucher privatization countries clearly support the theoretical hypotheses presented in Section 2, we infer that there is a strong possibility that countries that dished out state assets indiscriminately and free of charge through the voucher system failed to motivate citizens who benefitted to make particularly striking efforts to restructure their owned firms. In other words, this result backs up the perceptive notion by Megginson and Netter (2001) that “most countries’ actual experience with vouchers has been poor” (p. 345). Third, in countries that used

direct sales to strategic investors as their core approach to privatization, the impact on firm performance of domestic outsider ownership was clearly higher than that in other countries in terms of both effect size and statistical significance. Therefore, it is evident that the combination of restricted screening of acquirers of state assets and their transfer for counter value was a highly effective means of discovering domestic company owners comparable to foreign investors. Fourth, in countries where enterprise privatization progressed swiftly, the differential between domestic owners and foreign investors as seen in their effect on firm performance was, in terms of effect size, much narrower than it was in nations that moved more slowly toward privatization. This finding indicates that rapid progress toward privatization, by intensifying interfirm competition and the exit of underperforming firms from the market, might have served to eliminate gaps among different company owners.

In the above sense, the estimation results of the extended meta-regression model reported in Section 6 inform us that a comprehensive comparative analysis of differences between nations as manifested in locations, privatization methods, and policy implementation speed is an effective way to shake off the opaqueness of empirical findings in the extant literature and to derive clear and important theoretical implications concerning the impact of ownership structure on firm performance in the post-privatization period.[21]

Furthermore, according to the assessment of publication selection bias in Section 7, while there is a high probability that type II publication selection bias exists in this field of research as a whole, the risk of type I bias is relatively low. As a result, we revealed that for 10 of the 18 ownership variable types, the estimates collected from the previous literature are highly likely to contain genuine empirical evidence. With regard to the remaining eight ownership variable types, more empirical studies are needed to understand their actual effect on firm performance.

In light of the meta-analysis results summarized above, we would like to emphasize above all others the following two points as important lessons to be learned from the privatization study of CEE and FSU economies.

First, in these former socialist transition economies, the private sector is more desirable than the state as a firm-owning entity; because of this, privatization policy was a vital element for the restructuring of domestic firms in every country. Indeed, "privatization is transition" (Brada, 1996). However, the selection of owners is more important than privatization itself. In fact, results of the meta-analysis in this paper provided strong support for Kornai's (1990) assertion that "state

[21] Another factor that led to the unclear results of the meta-analysis performed in Sections 4 and 5 is the fact that study-specific research conditions, such as definitions of ownership variables and data-processing methods, underlying the literature covered by the meta-analysis cannot be excluded. However, the results presented in Section 6 indicate that even if they did have an effect, it was probably a minor one. We are grateful to Evžen Kočenda for pointing this out.

property must be squandered by distributing it to one and all merely out of kind.… The point now is not to hand out the property, but rather to place it into the hands of a really better owner" (pp. 81–82), and Stiglitz's (1994) reminder that "property rights are more important, [and] how property rights are assigned may be more important" (p. 176).

We found that the restructuring effect of enterprise privatization is heavily influenced by the policy method and the speed of implementation as well as country-specific factors. From this point of view, mass privatization via vouchers was extremely problematic. This is due to the fact that in voucher-privatization countries, there was a high risk of the dramatic reduction of post-privatization owners' efforts to restructure their firms, irrespective of the differences in their attributes. This was an obvious side effect of mass privatization through the use of a voucher system being carried out with the primary political aims of obtaining the support of citizens and adhering to the Washington Consensus, with the economic goal of restructuring privatized firms being positioned as secondary.

In contrast to the bitter experience of the voucher privatization countries, it is almost certain that direct sales to strategic investors was quite an effective method from the viewpoint of improved post-privatization firm performance. In this case, the profit-seeking motivation seems to have served as a highly effective tool for inspiring new owners to restructure. As shown in **Table 1**, direct sales were carried out in 21 of the 28 CEE and FSU countries, and it is extremely interesting that this method also came to be emphasized in countries that had initially conducted voucher privatization.

The second biggest point at issue in the debate on enterprise privatization in CEE and FSU countries has been whether insiders and domestic outsider investors are superior. According to the results of our meta-analysis in this paper, the series of empirical studies over the past quarter century have not necessarily arrived at a single conclusion with regard to this point. In most transition countries, privatization policies were designed and implemented to benefit insiders and were, in a sense, natural political choices, given that it was necessary to find people to take over more than 150,000 large and medium-sized state-owned firms and hundreds of thousands of small state-owned firms (Åslund, 2013).

In the case of insider ownership, there was a strong tendency for employees to remain in their posts and for the payment of wages to take priority over investment. This tendency posed a risk of diminishing the effect of restructuring. The large-scale implementation of privatization policies that favored insiders may, therefore, have had a large negative impact on the entire national economy. On the other hand, with regard to the question of whether the ownership of firms by outsider investors was definitely effective, Frydman et al. (2007) made the following point: If managers, who are agents, endeavor to satisfy the speculative motives of outsider

investors, who are principals, by doing everything they can to maximize short-term profits, there is a risk that company management with a long time horizon will be neglected; as a consequence of this, the initially expected restructuring effect will fail to be adequately realized. Furthermore, in cases where there is extremely serious information asymmetry between outsider investors and firm managers, it is impossible to reject the possibility that managerial ownership will have a more favorable impact on restructuring than ownership by outsider investors by solving the agency problem caused by the separation of ownership and control. From this point of view, the results of our meta-analysis that imply competitive impacts between insiders and domestic outsider investors on firm performance in the post-privatization period are noteworthy.

Nevertheless, it is difficult to make a rigorous distinction between insiders and outsider investors, both theoretically and in practice. For example, the bank or holding company at the center of a business group, while formally an outsider investor from the point of view of its subsidiaries, actually behaves a lot more like an insider (Frydman and Rapaczynski, 1994; Aoki et al., 2007; Miyajima, 2007).[22] Thus, a task for the future is to further refine approaches for the comparative analysis of insider ownership and outsider investor ownership.

Given the limitations of studying transition economies, the facts and lessons described above could only have been drawn from a vast comprehensive meta-analysis of the previous research. We will, therefore, conclude this paper by stressing that this study constitutes an attempt to explicitly demonstrate that meta-analysis can play a role that goes beyond just quantitatively reviewing the literature in a specific field of research.

[22] This is a good example of how ownership relationships within Russian business groups result in a strong tendency to internalize decision making (Pappe and Galukhina, 2009). Furthermore, the phenomenon of *recombination* in CEE firms—recombining the ownership in the post-privatization period—suggests that even if ownership does not appear to be insider in terms of external appearance, it will involve the establishment of common interests between owners and the owned (Stark and Bruszt, 1998).

APPENDIX

METHOD FOR EVALUATING THE QUALITY LEVEL OF A STUDY

This appendix describes the evaluation method used to determine the quality level of the studies subjected to our meta-analysis.

For journal articles, we used the ranking of economics journals that had been published as of November 1, 2012, by IDEAS—the largest bibliographic database dedicated to economics and available freely on the Internet (http://ideas.repec.org/)—as the most basic information source for our evaluation of quality level. IDEAS provides the world's most comprehensive ranking of economics journals, and as of November 2012, 1173 academic journals were ranked.

We divided these 1173 journals into 10 clusters, using a cluster analysis based on overall evaluation scores, and assigned each of these journal clusters a score (weight) from 1 (the lowest journal cluster) to 10 (the highest).

For academic journals that are not ranked by IDEAS, we referred to the Thomson Reuters Impact Factor and other journal rankings and identified the same level of IDEAS ranking–listed journals that correspond to these non-listed journals; we have assigned each of them the same score as its counterpart.

For academic books and book chapters, we have assigned a score of 1 in principle, but if at least one of the following conditions is met, each of the relevant books or chapters uniformly received a score of 4, which is the median value of the scores assigned to the above-mentioned IDEAS ranking–listed economics journals: (1) the academic book or book chapter clearly states that it has gone through a peer review process; (2) its publisher is a leading academic publisher that has external evaluations carried out by experts; or (3) the research level of the study has been evaluated by the authors to be obviously high.

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Table 1. Privatization method and private sector size in transition economies

Country name (abbreviation)	Privatization method (I: primary; II: secondary)				Private sector share in GDP in 2010 (%)
	Vouchers	MEBOs	Direct sales	Auctions	
Albania (AL)	II	I			75
Armenia (AM)		II	I		75
Azerbaijan (AZ)	II			I	75
Belarus (BY)	II	I			30
Bosnia and Herzegovina (BA)	I		II		60
Bulgaria (BG)	II		I		75
Croatia (HR)	II	I			70
Czech Republic (CZ)	I		II		80
Estonia (EE)	II		I		80
Macedonia (MK)		I	II		70
Georgia (GE)	I		II		75
Hungary (HU)		II	I		80
Kazakhstan (KZ)	II		I		65
Kyrgyz Republic (KG)	I	II			75
Latvia (LV)	II		I		70
Lithuania (LI)	I		II		75
Moldova (MD)	I		II		65
Montenegro (ME)	I		II		65
Poland (PL)		II	I		75
Romania (RO)		I	II		70
Russia (RU)	I		II		65
Serbia (RS)			II	I	60
Slovakia (SK)	II		I		80
Slovenia (SI)	II	I			70
Tajikistan (TJ)		II	I		55
Turkmenistan (TM)		I	II		25
Ukraine (UA)	I	II			60
Uzbekistan (UZ)		I	II		45

Source: EBRD (2004) and EBRD website (http://www.ebrd.com).

Table 2. Characteristics of privatization methods in terms of mode of distribution of state properties and selection of their acquisitors

	Vouchers	MEBOs	Direct sales
Distribution of state property	Acquisition for free	Acquisition for counter value	Acquisition for counter value
Selection of state-property acquisitors by availability of funds and management capability	No	No	Yes

Source: By the authors.

Table 3. List of selected studies on the impact of post-privatization ownership on firm performance in transition economies for meta-analysis

Author(s) (publication year)	Target country [a]	Target industry	Estimation period [b]	Firm performance variable type (dependent variable) [c]	Ownership variable type (independent variable) [d]	Number of collected estimates
Earle et al. (1996)	RU	Mining and manufacturing	1994	A, E	4, 14-15	21
Claessens (1997)	CZ, SK	Various industries	1992–1993	D	1, 4, 8, 12	16
Claessens et al. (1997)	CZ	Mining and manufacturing	1992–1995	C-D	1, 6, 9, 12	40
Earle and Estrin (1997)	RU	Manufacturing	1994	A-B	4-6, 8-9, 11-15	198
Frydman et al. (1997)	CZ, HU, PL	Manufacturing	1990–1994	A-C	1, 4, 6, 9, 11-15	69
Hingorani et al. (1997)	CZ	Various industries	1993–1994	D	1, 12-13	18
Pohl et al. (1997)	CZ	Mining and manufacturing	1992–1995	C-D	1, 6, 9, 12	20
Smith et al. (1997)	SI	Manufacturing	1990–1992	A	12, 15	8
Jones (1998)	RU	Various industries	1992–1996	A-B	1, 5, 8, 14-15	42
Jones et al. (1998)	BG	Various industries	1989–1992	A	13-15	7
Weiss and Nikitin (1998)	CZ	Various industries	1993–1996	B-C	1-3, 8-12	260
Brouthers and Arens (1999)	RO	Various industries	1997	E	13	2
Claessens and Djankov (1999)	CZ	Various industries	1992–1997	B-C	12	16
Djankov (1999a)	GE, MD	Manufacturing	1997	B	6, 8-9, 12	1
Djankov (1999b)	GE, KG, KZ, MD, RU, UA	Manufacturing	1997–1998	B	1, 5-6, 12, 14-15	12
Frydman et al. (1999)	CZ, HU, PL	Manufacturing	1990–1994	A-C	1, 4-5, 7, 11-15	33
Akimova and Schwödiauer (2000)	UA	Mining and manufacturing	1995–1997	E	4, 13	6
Buck et al. (2000)	BY, RU, UA	Mining and manufacturing	1995–1997	E	1, 5-6, 14	16
Claessens and Djankov (2000)	CZ	Various industries	1996	B-D	14	3
Djankov and Hoekman (2000)	CZ	Various industries	1992–1996	A	12	4
Earle and Telegdy (2000)	RO	Manufacturing	1992–1998	B	1, 5-6, 12	18
Frydman et al. (2000)	CZ, HU, PL	Manufacturing	1990–1993	A-C	4, 13	4
Jones and Mygind (2000a)	EE, LT, LY	Various industries	1993–1996	A	5, 12, 14-15	32
Jones and Mygind (2000b)	EE	Various industries	1994–1997	A-B, E	4, 12, 14-15	40
Kinoshita (2000)	CZ	Manufacturing	1995–1998	A	1, 12	3
Makhija and Spiro (2000)	CZ	Various industries	1993	D	1, 7-9, 12-13	65
Uhlenbruck and de Castro (2000)	CEE 8 countries, RU	Various industries	1995	A, C, E	1	3
Bevan et al. (2001)	RU	Manufacturing	2000	B-C	1, 4	8
Bosco (2001)	HU	Various industries	1993–1997	A	12	5
Brown and Earle (2001)	RU	Manufacturing	1993–1999	A	12	6
Carlin et al. (2001)	CEE and FSU 25 countries	Various industries	1999	A-B	1	10
Dean and Andreyeva (2001)	UA	Various industries	1995–1998	B	1, 14	2
UNECE (2001)	EE, SI	Manufacturing	1994–1998	B	12	4
Filatotchev et al. (2001b)	BY, RU, UA	Manufacturing	1995–1997	E	12	5
Jones and Mygind (2001)	EE	Various industries	1993–1997	A	4, 12, 14-15	12
Konings (2001)	BG, PL, RO	Various industries	1993–1997	A	12	9
Kuznetsov and Muravyev (2001a)	RU	Various industries	1995–1997	B-D	1	12
Kuznetsov and Muravyev (2001b)	RU	Various industries	1995–1997	B-D	1, 4, 12-13	42
Maurel (2001)	HU	Various industries	1993–1998	B	1, 6, 12	9
Sgard (2001)	HU	Manufacturing	1992–1999	B	1, 12	22
Angelucci et al. (2002a)	BG, PL, RO	Various industries	1994–1998	A	12	27
Angelucchi et al. (2002b)	RU	Manufacturing	2000	B-C	1, 4	8
Cull et al. (2002)	CZ	Various industries	1993–1996	A,C	1, 8-9, 12	73
Earle and Telegdy (2002)	RO	Mining and manufacturing	1992–1999	B	5, 9, 13	28
Goud (2002)	CEE and FSU 25 countries	Various industries	1999	A	4-6, 9, 12-15	18
Grosfeld and Tressel (2002)	PL	Various industries	1991–1998	A	1, 5, 7, 11, 14	13
Harper (2002)	CZ	Various industries	1989–1994	A-C	12	5
Hrovatin and Uršič (2002)	SI	Mining and manufacturing	1998	A	1, 13	6
Jones and Mygind (2002)	EE	Various industries	1993–1997	A	4, 12, 14-15	8
Kőrösi (2002)	HU	Various industries; manufacturing	1992–1999	A	1, 12	14
Muravyev (2002)	RU	Mining and manufacturing	1993–2000	B-C	1,2	20
Weiss and Nikitin (2002)	CZ	Various industries	1994–1996	B-C	7, 11	30
Andreyeva (2003)	UA	Mining and manufacturing	1996–2000	A	2-4, 13	52
Damijan et al. (2003a)	CEE 8 countries	Manufacturing	1994–1998	A	12	16
Damijan et al. (2003b)	CEE 10 countries	Manufacturing	1994–1999	A	12	20
Earle and Telegdy (2003)	RO	Various industries	1992–2001	B	1, 5-6, 12-13	25
Kočenda (2003)	CZ	Various industries	1996–1999	A-C	1, 5-6, 8-9, 11	36
Kočenda and Valachy (2003)	CZ	Various industries	1996–1999	A-C	5, 8-9, 11	40
Major (2003)	HU	Various industries	1990–2000	C	12	22
Pivovarsky (2003)	UA	Various industries	1998	B-C	1, 6, 12	32
Yudaeva et al. (2003)	RU	Mining and manufacturing	1993–1997	A	12	16
Akimova and Schwödiauer (2004)	UA	Mining and manufacturing	1999–2000	B	1, 4, 12–15	18
Guriev and Rachinsky (2004)	RU	Mining and manufacturing	2000–2001	A–C	2–4, 12	48
Javorcik (2004)	LT	Manufacturing	1996–2000	A–B	12	8

Author(s) (publication year)	Target country [a]	Target industry	Estimation period [b]	Firm performance variable type (dependent variable) [c]	Ownership variable type (independent variable) [d]	Number of collected estimates
Lutz and Talavera (2004)	UA	Manufacturing	1998–1999	B, E	1, 5–6, 12, 14–15	40
Makhija (2004)	CZ	Various industries	1993	D	1, 8–9, 12, 14	21
Orazem and Vodopivec (2004)	SI	Manufacturing	1994–2001	B	12	8
Rizov (2004)	BG	Manufacturing	1998–1999	C	1	2
Rojec et al. (2004)	EE, SI	Manufacturing	1994–1998	E	12	12
Simoneti et al. (2004)	SI	Various industries	1995–1999	B	14	4
Torlak (2004)	BG, CZ, HU, PL, RO	Manufacturing	1993–2000	A	12	10
Atanasov (2005)	BG	Various industries	1998–1999	D	1	4
Bhaumik and Estrin (2005)	RU	Manufacturing	1997–1999	A	1, 13	22
Damijan and Knell (2005)	EE, SI	Manufacturing	1994–1999	A	12	4
Konings et al. (2005)	BG, RO	Manufacturing	1994–1998	C	12	10
Bakonova et al. (2006)	BY	Mining and manufacturing	2000–2004	B–C, E	14	7
Brown et al. (2006)	HU, RO, RU, UA	Manufacturing	1985–2002	A–B	12	20
Kuznetsov et al. (2006)	RU	Mining and industry	1999–2003	C	1, 7, 13	9
Miller (2006)	BG	Various industries	1996–2003	B–C	1, 6, 9, 12–13	16
Pawlik (2006)	PL	Manufacturing	1993–2002	B	12	40
Sabirianova et al. (2006)	CZ, RU	Mining and manufacturing	1992–2000	A	12	15
Vahter (2006)	EE, SI	Manufacturing	1994–2001	B	12	4
Bhaumik and Estrin (2007)	RU	Manufacturing	1997–1999	A	1, 13	5
Estrin et al. (2007)	BY	Manufacturing	2004	B–C, E	1, 12, 14	21
Grygorenko and Lutz (2007)	UA	Mining and manufacturing	1997–1999	A–C	1	12
Halpern and Muraközy (2007)	HU	Manufacturing	1996–2003	A–B	12	2
Hanousek et al. (2007)	CZ	Various industries	1996–1999	A, C	1, 5, 8–9, 11–12	60
Mueller and Peev (2007)	CEE 11 countries	Various industries	1999–2003	D	1, 7–9, 11–12	7
Tytell and Yudaeva (2007)	PL, RO, RU, UA	Manufacturing	1998–2003	A	12	4
Vahter and Masso (2007)	EE	Manufacturing; services	1995–2002	A–B	12	24
Altomonte and Colantone (2008)	RO	Various industries	1996–2001	B	12	2
Asaftei et al. (2008)	RO	Manufacturing	1995–2003	A	12	6
Filatotchev et al. (2008)	EE, HU, PL, SI, SK	Manufacturing	2002–2003	E	12	3
Gorodnichenko and Grygorenko (2008)	UA	Various industries	1993–2002	A	10	11
Kuznetsov et al. (2008)	RU	Mining and manufacturing	1999–2003	C	1, 7, 13	9
Modén et al. (2008)	PL	Mining and manufacturing	1995–2000	B–C	12	32
Avdasheva (2009)	RU	Mining and manufacturing	2001–2004	A, C, E	10, 14	10
Grosfeld (2009)	PL	Various industries	1991–2003	D	1, 6, 12–13	60
Hanousek et al. (2009)	CZ	Various industries	1995–1996	A–C	1, 5, 7, 11	56
Maury and Liljeblom (2009)	RU	Various industries	1998–2003	D	1, 10, 12	28
Roberts and Thompson (2009)	PL	Manufacturing	1992–1993	B	1	1
Kosová (2010)	CZ	Various industries	1994–2001	A	12	8
Hobdari et al. (2011)	EE, SI	Various industries	1993–2004	E	1, 12–13	48
Iwasaki et al. (2011)	HU	Manufacturing; services	2002–2005	E	12	8
Koman et al. (2011)	ME	Various industries	2002–2007	B	1, 6	18
Cuaresma et al. (2012)	BY	Manufacturing	2005–2010	B	1	8
Džanić (2012)	HR	Various industries	2003–2009	B–D	1, 7, 12–14	68
Hanousek et al. (2012)	CZ	Manufacturing; services	1998–2007	A	12	76
Iwasaki et al. (2012a)	HU	Manufacturing; services	2002–2005	A–B	1, 12	48
Iwasaki et al. (2012b)	HU	Various industries	1999–2003	A	12	7
Jurajda and Stančík (2012)	CZ	Various industries	1995–2005	B–C	12	6
Kočenda and Hanousek (2012)	CZ	Various industries	1996–2005	C	1, 5, 7, 11	144
Sabirianova et al. (2012)	CZ, RU	Mining and manufacturing	1992–2000	A	12	40
Stephan et al. (2012)	UA	Various industries	2002–2006	C	1	2
Bogetić and Olusi (2013)	RU	Manufacturing	2003–2008	B	2, 3	4
D'Souza et al. (2014)	CEE and FSU 27 countries	Various industries	2002–2009	A–B	1, 12	8
Gugler et al. (2014)	CEE and FSU 11 countries	Various industries	2000–2007	C–D	1, 5, 12	27
Muravyev et al. (2014)[e]	RU	Various industries	1998–2009	C–D	1, 14	28
Cieślik et al. (2015)	CEE 7 countries	Manufacturing; services	2002–2009	E	12	13
Shepotylo and Vakhitov (2015)	UA	Manufacturing; services	2001–2007	C	12	6
Vintilă and Gherghina (2015)	RO	Various industries	2007–2011	D	1, 7, 14, 15	40

Notes:

[a] Country abbreviations correspond with those in Figure 1.

[b] Estimation period may differ depending on the target countries.

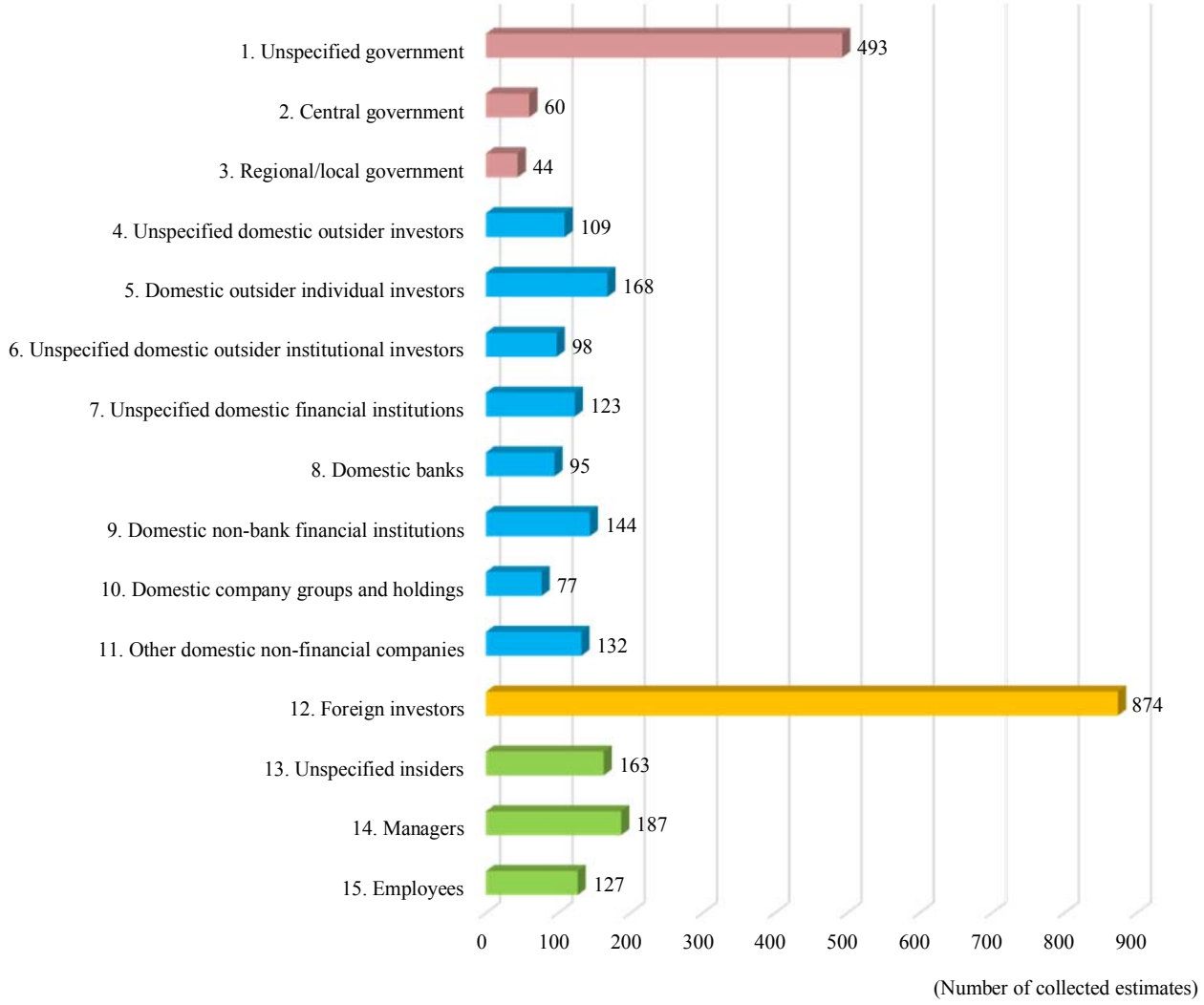
[c] A: Sales and output; B: Efficiency; C: Productivity; D: Firm value; E: Other firm performance.

[d] 1: Unspecified state; 2: Central government; 3: Regional/local government; 4: Unspecified domestic outsider investors; 5: Domestic outsider individual investors; 6: Unspecified domestic outsider institutional investors; 7: Unspecified domestic financial institutions; 8: Domestic banks; 9: Domestic non-bank financial institutions; 10: Domestic company groups and holdings; 11: Other non-financial companies; 12: Foreign investors; 13: Unspecified insiders; 14: Managers; 15: Employees.

[e] Including estimates not reported in the paper. We thank Alexander Muravyev for providing us with full estimation results.

Source: Compiled by the authors.

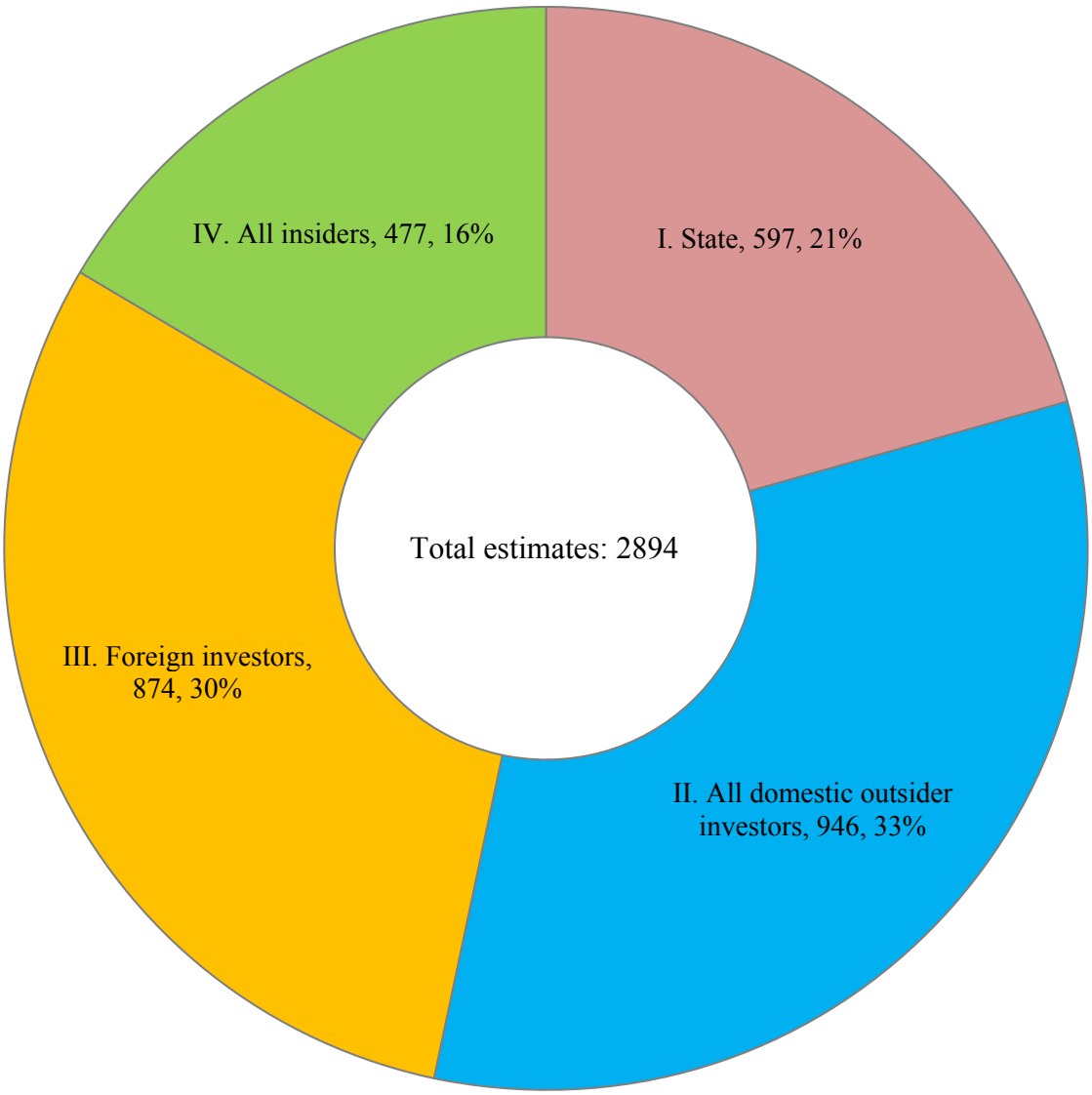
Figure 2. Breakdown of collected estimates by basic category of ownership variable



Note: Total number of collected estimates is 2894.

Source: Authors' illustration.

Figure 3. Breakdown of collected estimates by aggregated category of ownership variable



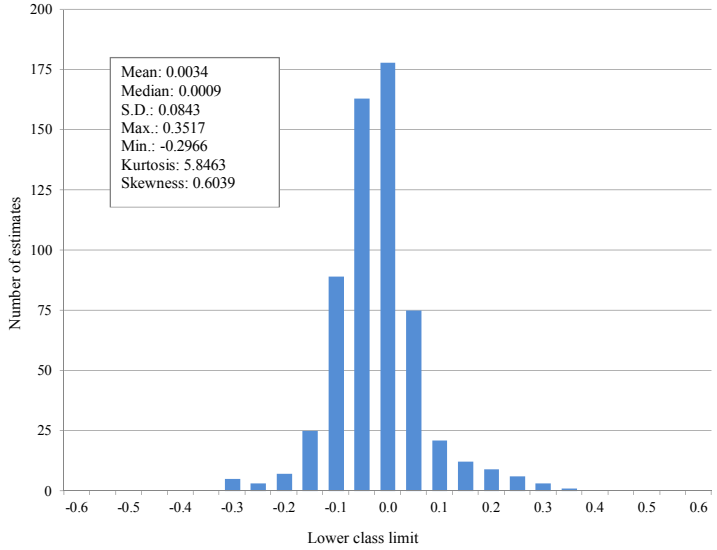
Note: Values following category name denote number of collected estimates and share in total estimates, respectively.

Source: Authors' illustration.

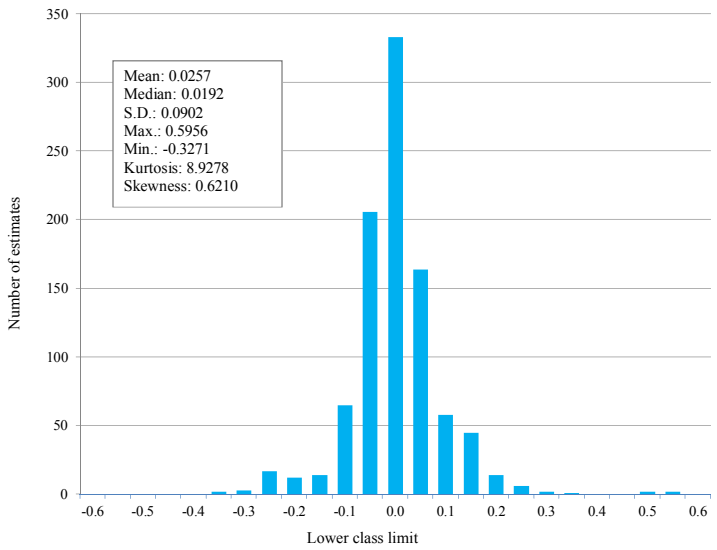
Figure 4. Distribution of partial correlation coefficients and t values by aggregated category of ownership variable

(a) PCC

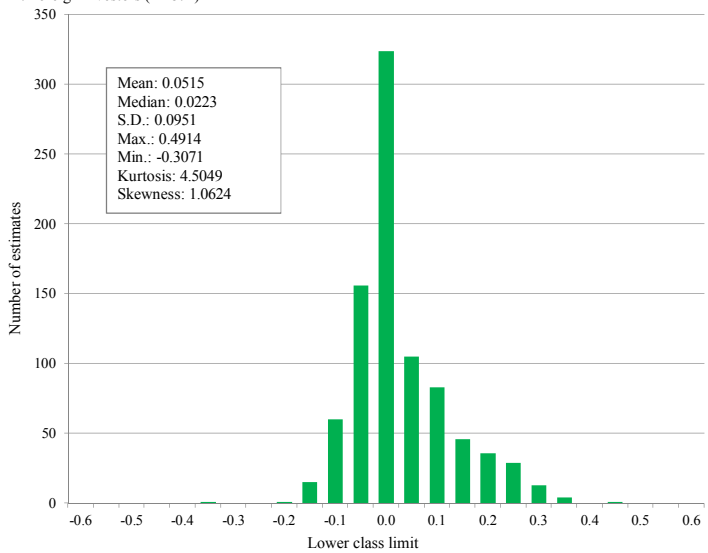
I. State (K=597)[a]



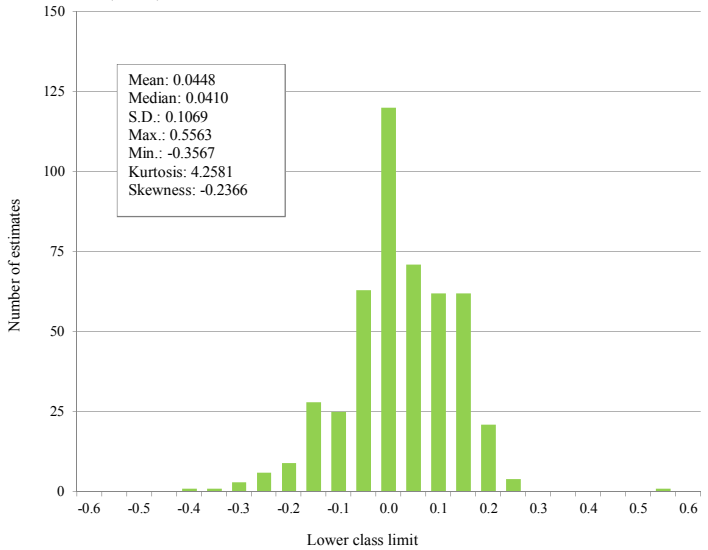
II. All domestic outsider investors (K=946)[b]



III. Foreign investors (K=874)[c]

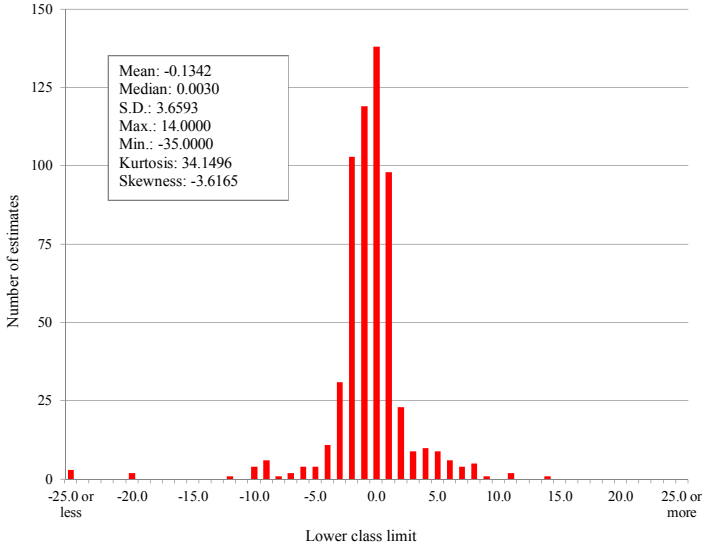


IV. All insiders (K=477)[d]

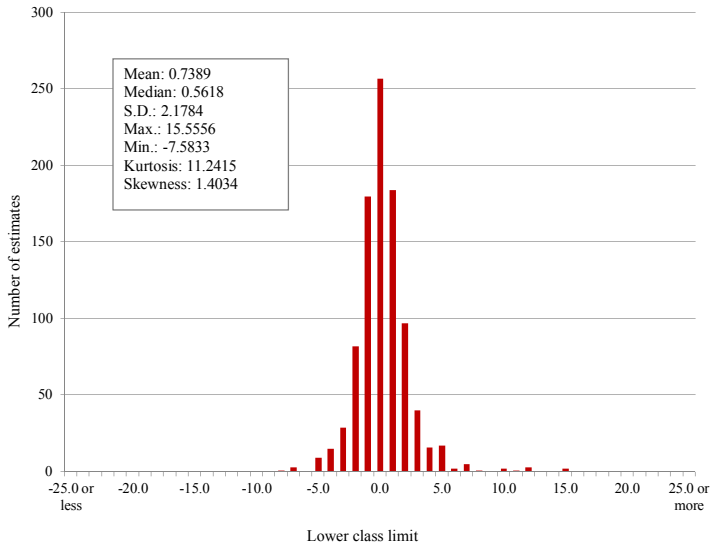


(b) t value

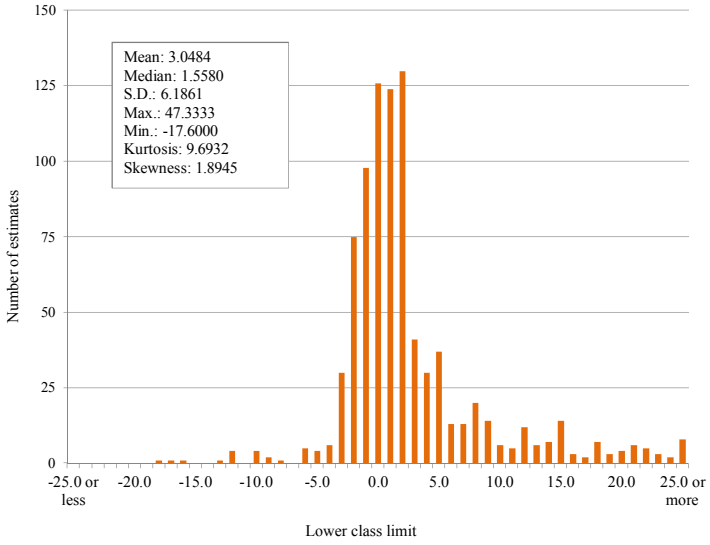
I. State (K=597)[c]



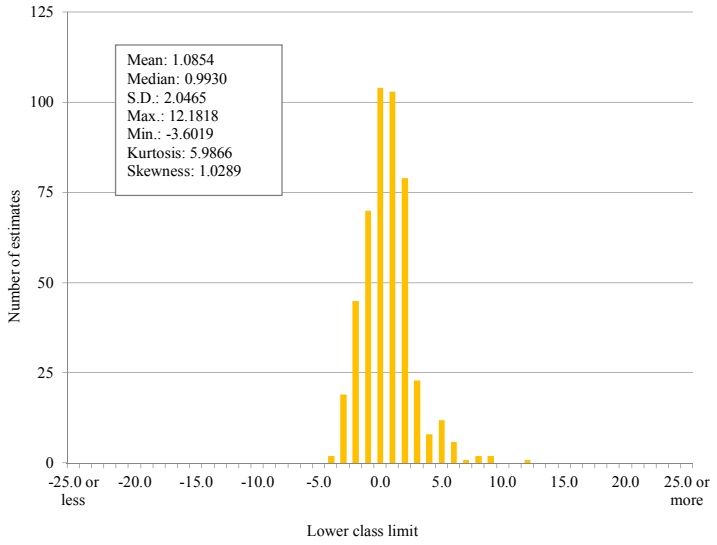
II. All domestic outsider investors (K=946)[f]



III. Foreign investors (K=874)[g]



IV. All insiders (K=477)[h]



Notes:

[a] Shapiro–Wilk normality test: W=0.943, z=7.510, p=0.000

[b] Shapiro–Wilk normality test: W=0.916, z=9.679, p=0.000

[c] Shapiro–Wilk normality test: W=0.914, z=9.520, p=0.000

[d] Shapiro–Wilk normality test: W=0.977, z=4.726, p=0.000

[e] Shapiro–Wilk normality test: W=0.686, z=11.677, p=0.000

[f] Shapiro–Wilk normality test: W=0.894, z=10.257, p=0.000

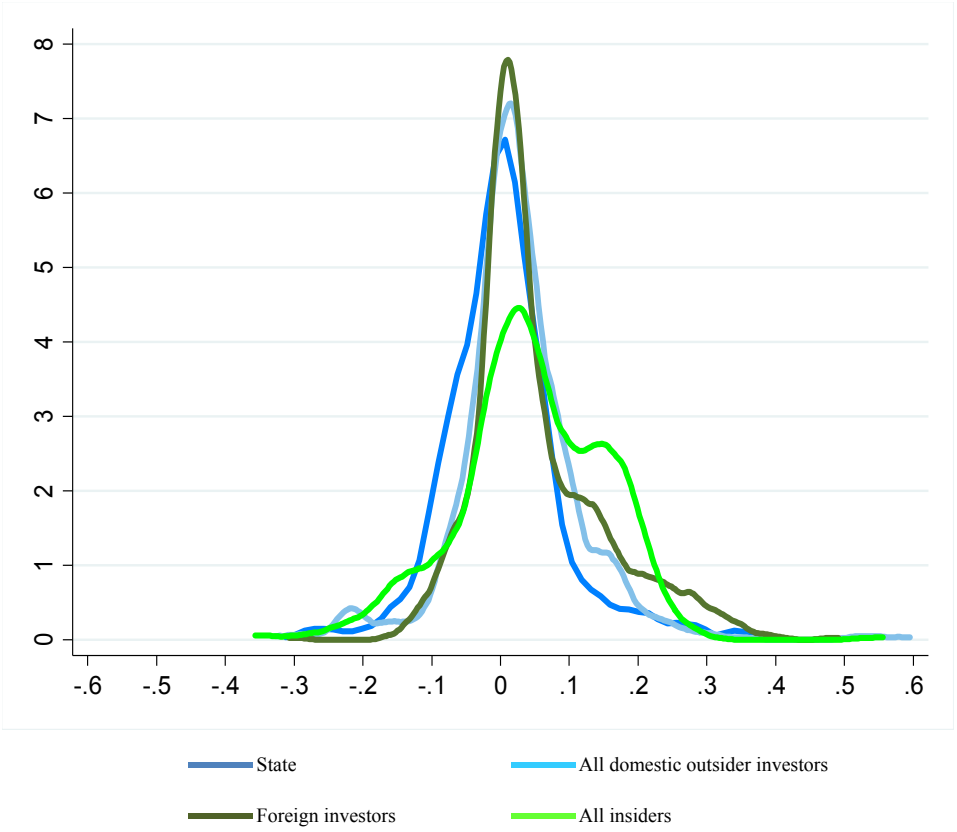
[g] Shapiro–Wilk normality test: W=0.805, z=11.542, p=0.000

[h] Shapiro–Wilk normality test: W=0.943, z=6.950, p=0.000

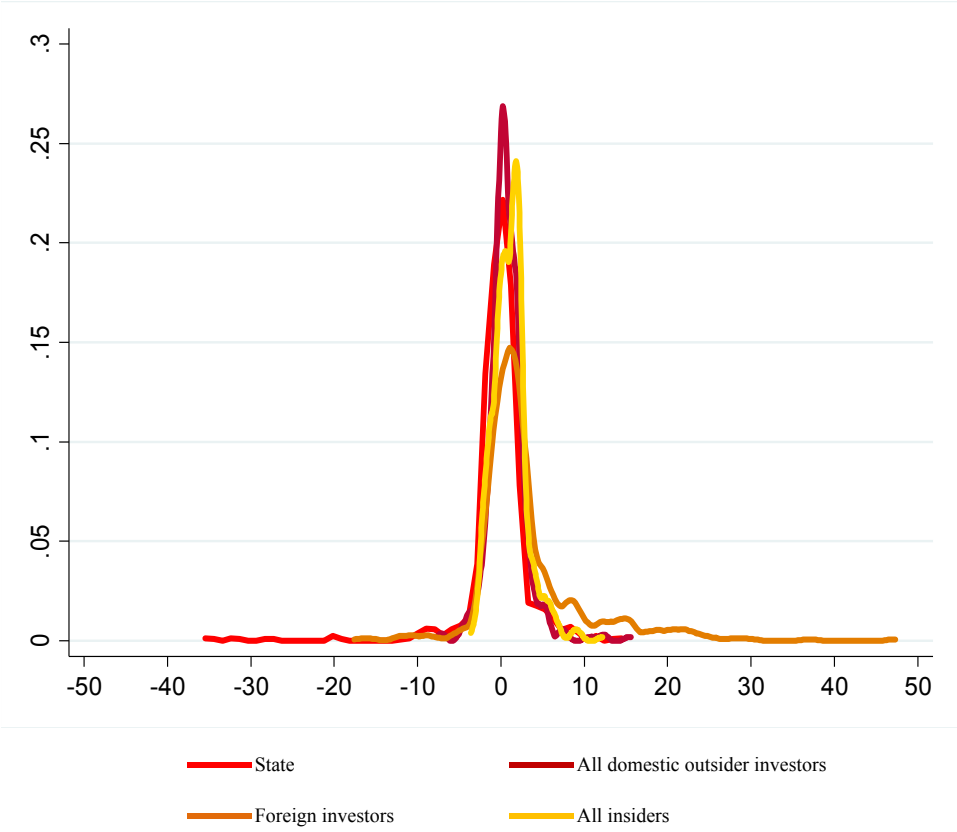
Source: Authors' illustration.

Figure 5. Kernel density estimation of partial correlation coefficients and t values by aggregated category of ownership variable

(a) PCC



(b) t value

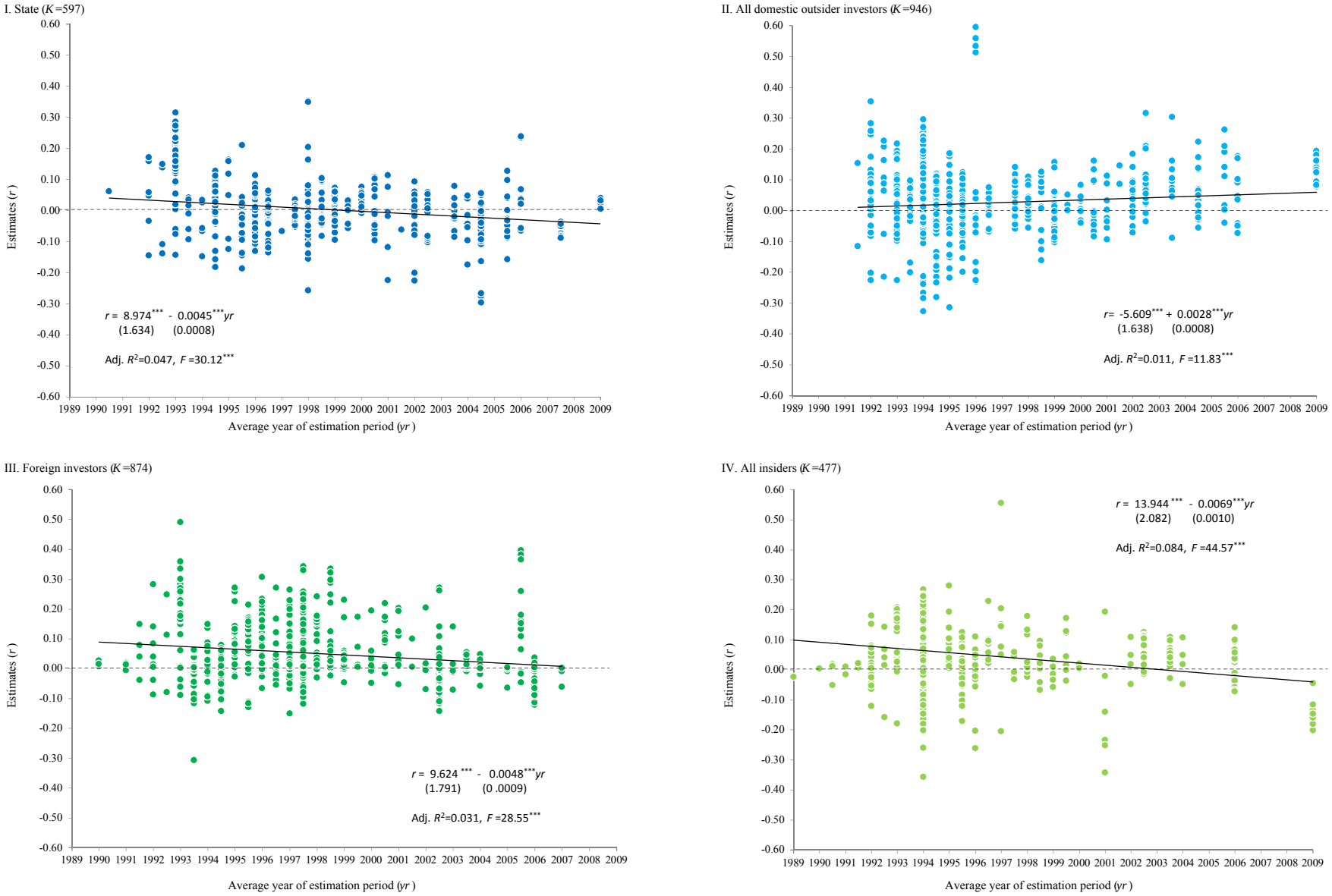


Note: Vertical axis is kernel density. Horizontal axis is variable value.

Source: Authors' illustration.

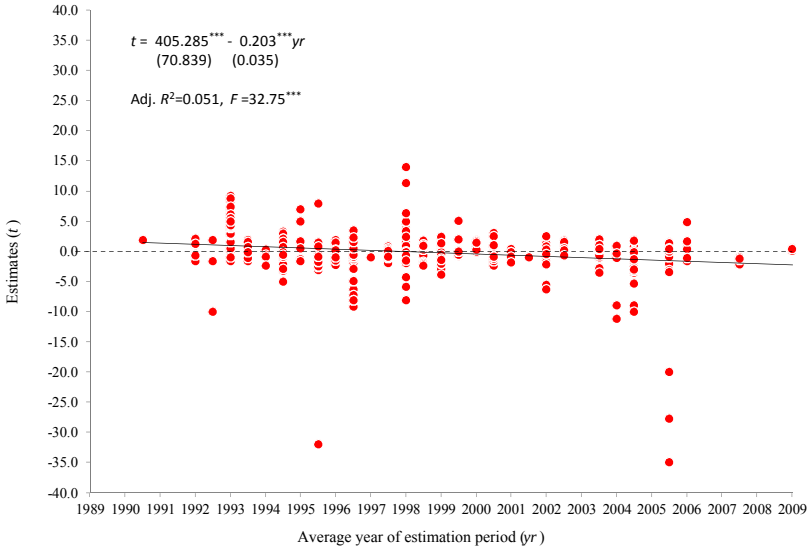
Figure 6. Chronological order of partial correlation coefficients and t values by aggregated category of ownership variable

(a) PCC

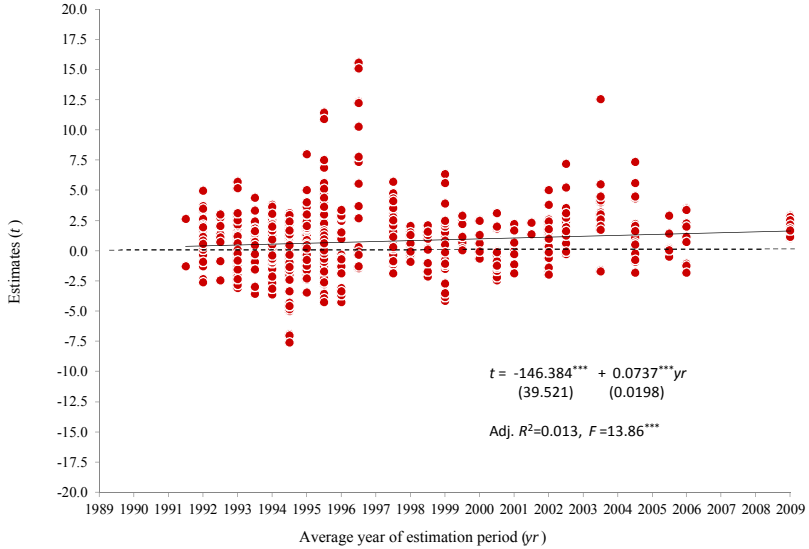


(b) t value

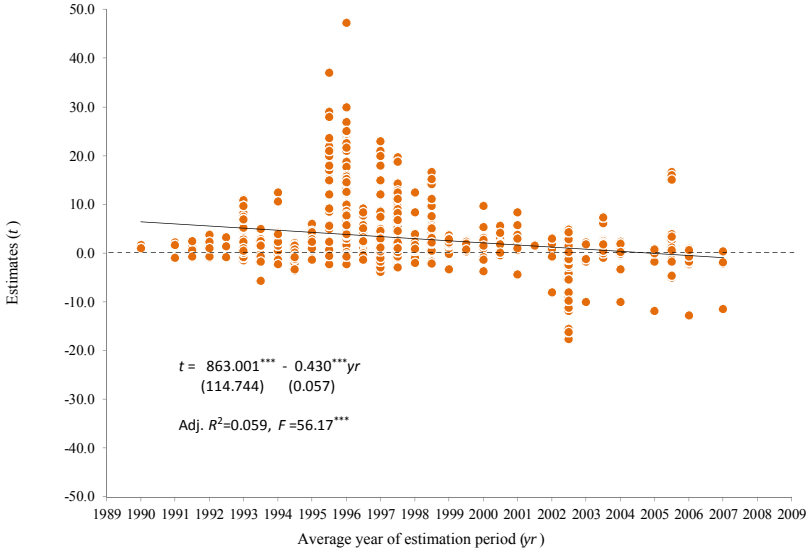
I. State (K=597)



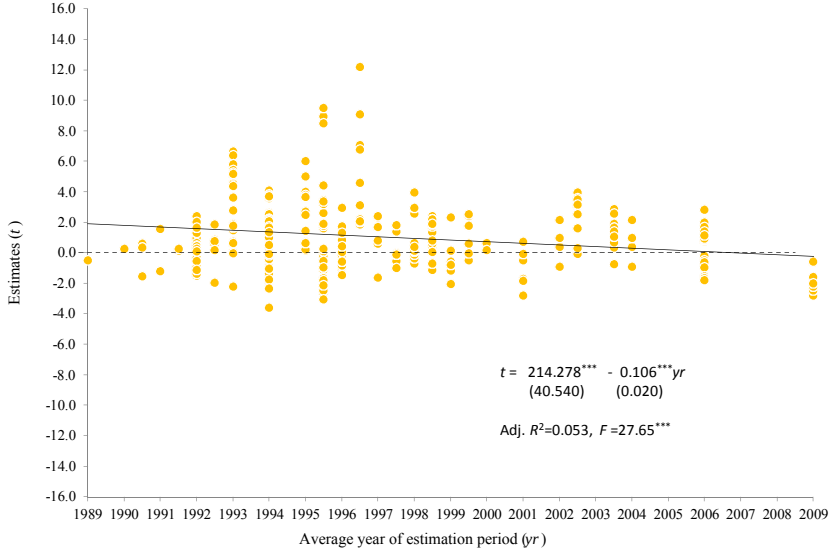
II. All domestic outsider investors (K=946)



III. Foreign investors (K=874)



IV. All insiders (K=477)



Note: Figures in parentheses beneath the regression coefficients of the approximate straight line are standard errors. *** and ** denote statistical significance at the 1% and 5% levels, respectively.

Source: Authors' illustration.

Table 4. Synthesis of estimates

Ownership variable type [a]	Number of estimates (K)	(a) Synthesis of PCCs			(b) Combination of t values			
		Fixed-effect model (z value) [b]	Random-effects model (z value) [b]	Test of homogeneity [c]	Unweighted combination (p value)	Weighted combination (p value)	Median of t values	Fail-safe N (fsN)
I. State	597	-0.018 *** (-29.60)	0.004 (1.55)	7115.438 ***	-3.280 *** (0.00)	-0.687 (0.25)	0.003	1777
1. Unspecified government	493	-0.003 *** (-3.53)	0.005 * (1.64)	4731.900 ***	0.794 (0.21)	0.152 (0.44)	0.067	-378
2. Central government	60	-0.038 *** (-25.67)	0.003 (0.48)	508.632 ***	-4.617 *** (0.00)	-4.617 *** (0.00)	-0.043	413
3. Regional/local government	44	-0.067 *** (-41.86)	-0.006 (-0.78)	327.686 ***	-9.347 *** (0.00)	-9.347 *** (0.00)	-0.141	1377
II. All domestic outsider investors	946	0.026 *** (34.66)	0.021 *** (11.57)	3799.439 ***	22.726 *** (0.00)	4.660 *** (0.00)	0.562	179610
4. Unspecified domestic outsider investors	109	0.032 *** (8.78)	0.041 *** (6.72)	213.126 ***	9.948 *** (0.00)	2.413 *** (0.01)	0.858	3877
5. Domestic outsider individual investors	168	0.026 *** (19.78)	0.027 *** (7.18)	789.334 ***	13.859 *** (0.00)	2.573 *** (0.01)	0.635	11757
6. Unspecified domestic outsider institutional investors	98	0.043 *** (28.61)	0.036 *** (6.66)	635.112 ***	17.152 *** (0.00)	3.452 *** (0.00)	1.087	10556
7. Unspecified domestic financial institutions	123	-0.021 *** (-6.10)	-0.022 ** (-2.53)	696.014 ***	-5.793 *** (0.00)	-0.955 (0.17)	-0.260	1403
8. Domestic banks	95	0.011 *** (2.93)	0.011 * (1.73)	247.594 ***	3.047 *** (0.00)	0.628 (0.27)	-0.030	231
9. Domestic non-bank financial institutions	144	0.014 *** (8.29)	0.015 *** (4.40)	357.946 ***	7.444 *** (0.00)	2.153 ** (0.02)	0.453	2805
10. Domestic company groups and holdings	77	0.042 *** (10.18)	0.037 *** (5.52)	183.738 ***	8.818 *** (0.00)	1.762 ** (0.04)	0.910	2136
11. Other domestic non-financial companies	132	0.027 *** (9.51)	0.030 *** (6.89)	282.481 ***	9.883 *** (0.00)	2.096 ** (0.02)	0.710	4632
III (12). Foreign investors	874	0.024 *** (90.00)	0.047 *** (25.00)	33000.000 ***	90.120 *** (0.00)	14.478 *** (0.00)	1.558	2622279
IV. All insiders	477	0.035 *** (30.07)	0.043 *** (14.85)	1651.600 ***	23.706 *** (0.00)	5.323 *** (0.00)	0.993	98580
13. Unspecified insiders	163	0.037 *** (28.58)	0.050 *** (13.77)	734.615 ***	24.197 *** (0.00)	4.734 *** (0.00)	1.700	35105
14. Managers	187	0.046 *** (12.76)	0.055 *** (8.39)	537.153 ***	13.714 *** (0.00)	3.168 *** (0.00)	0.999	12810
15. Employees	127	0.007 * (1.91)	0.009 (1.26)	300.608 ***	1.888 ** (0.03)	0.517 (0.30)	0.174	40

Notes:

[a] Ownership variable types with Arabic numerals belong to the basic category, while those with Roman numerals belong to the aggregated category.

[b] Null hypothesis: The synthesized effect size is zero.

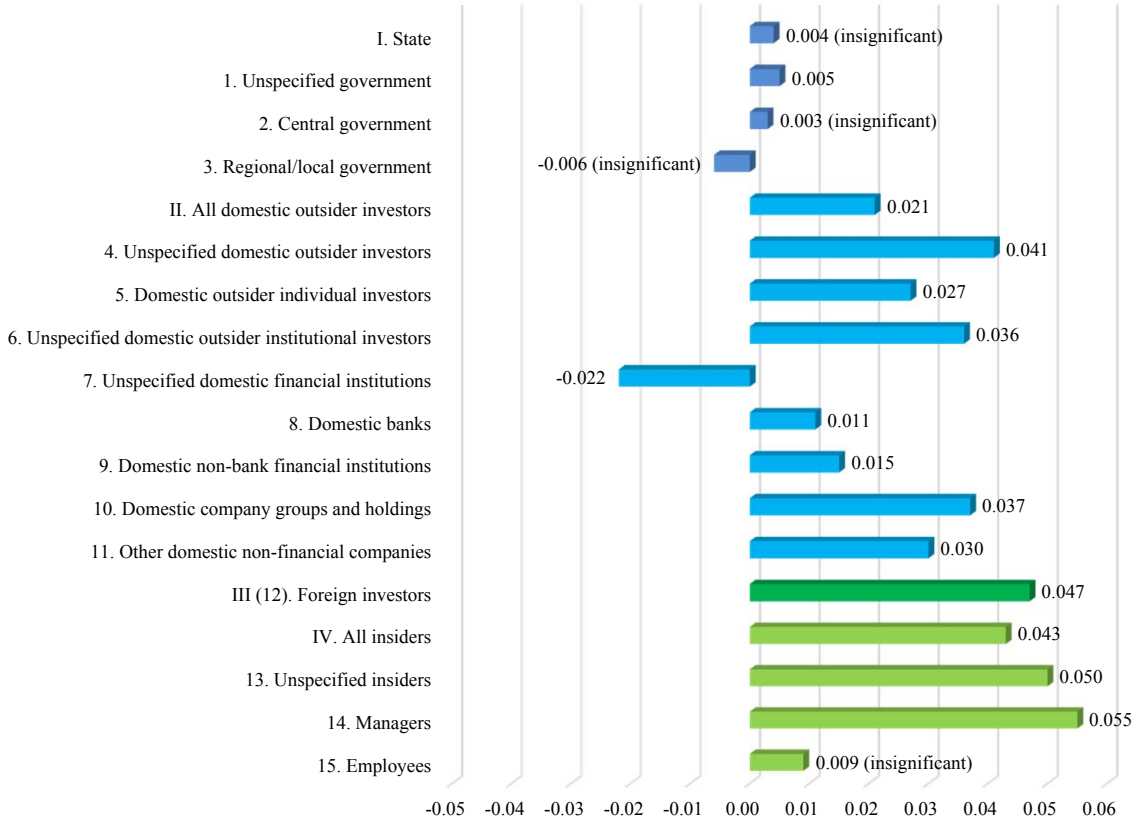
[c] Null hypothesis: Effect sizes are homogeneous.

***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

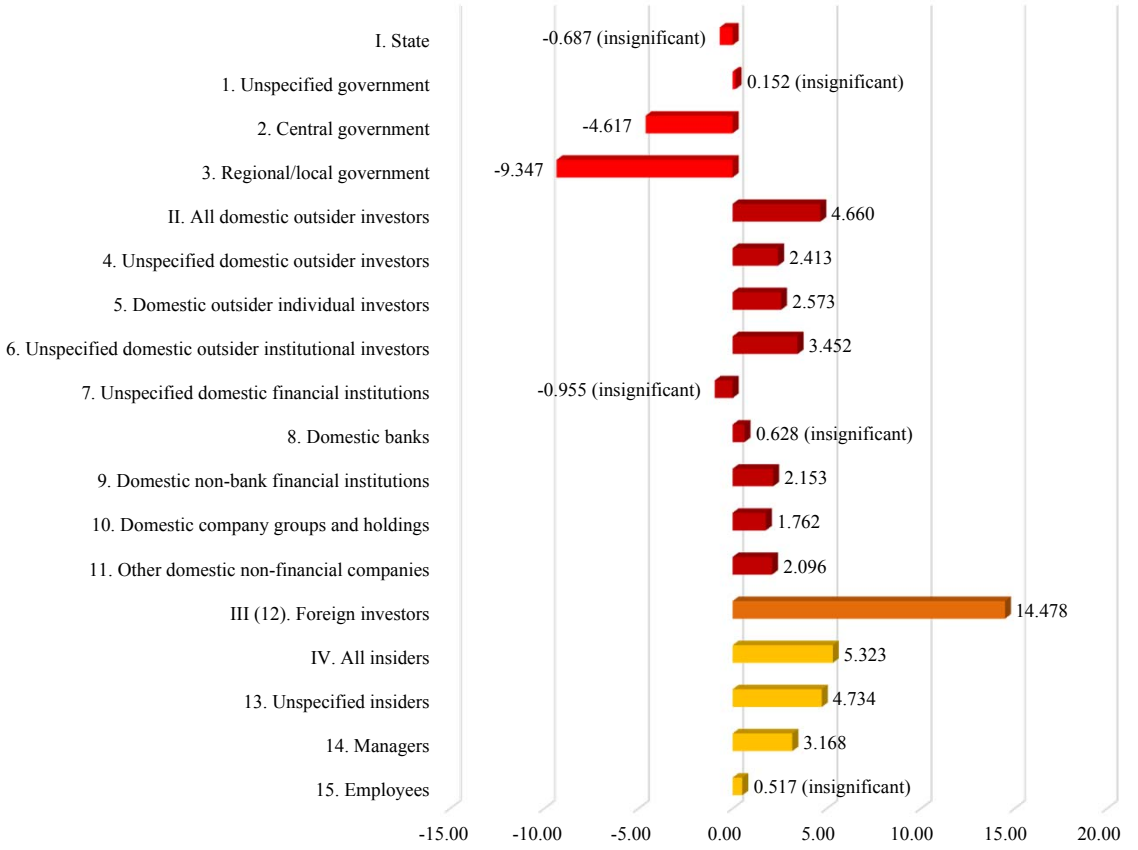
Source: Authors' estimation.

Figure 7. Illustrated comparison of synthesized estimates

(a) Synthesized value of PCC (random-effects model)



(b) Combined t value weighted by research quality



Note: Ownership variable types with Arabic numerals belong to the basic category, while those with Roman numerals belong to the aggregated category.

Source: Authors' illustration based on Table 3.

Table 5. Name, definition, and descriptive statistics of meta-independent variables

Variable name	Definition	Descriptive statistics		
		Mean	Median	S.D.
All domestic outsider investors	1 = if ownership variable used for estimation belongs to the aggregated category of all domestic outsider investors, 0 = otherwise	0.327	0	0.469
Foreign investors	1 = if ownership variable used for estimation belongs to the category of foreign investors, 0 = otherwise	0.302	0	0.459
All insiders	1 = if ownership variable used for estimation belongs to the aggregated category of all insiders, 0 = otherwise	0.165	0	0.371
Central government	1 = if ownership variable used for estimation belongs to the basic category of central government, 0 = otherwise	0.021	0	0.143
Regional/local government	1 = if ownership variable used for estimation belongs to the basic category of regional/local government, 0 = otherwise	0.015	0	0.122
Unspecified domestic outsider investors	1 = if ownership variable used for estimation belongs to the basic category of unspecified domestic outsider investors, 0 = otherwise	0.038	0	0.190
Domestic outsider individual investors	1 = if ownership variable used for estimation belongs to the basic category of domestic outsider individual investors, 0 = otherwise	0.058	0	0.234
Unspecified domestic outsider institutional investors	1 = if ownership variable used for estimation belongs to the basic category of unspecified domestic outsider institutional investors, 0 = otherwise	0.034	0	0.181
Unspecified domestic financial institutions	1 = if ownership variable used for estimation belongs to the basic category of unspecified domestic financial institutions, 0 = otherwise	0.043	0	0.202
Domestic banks	1 = if ownership variable used for estimation belongs to the basic category of domestic banks, 0 = otherwise	0.033	0	0.178
Domestic non-bank financial institutions	1 = if ownership variable used for estimation belongs to the basic category of domestic non-bank financial institutions, 0 = otherwise	0.050	0	0.217
Domestic company groups and holdings	1 = if ownership variable used for estimation belongs to the basic category of domestic company groups and holdings, 0 = otherwise	0.027	0	0.161
Other domestic non-financial companies	1 = if ownership variable used for estimation belongs to the basic category of other domestic non-financial companies, 0 = otherwise	0.046	0	0.209
Unspecified insiders	1 = if ownership variable used for estimation belongs to the basic category of unspecified insiders, 0 = otherwise	0.056	0	0.231
Managers	1 = if ownership variable used for estimation belongs to the basic category of managers, 0 = otherwise	0.065	0	0.246
Employees	1 = if ownership variable used for estimation belongs to the basic category of employees, 0 = otherwise	0.044	0	0.205
Dummy variable	1 = if ownership variable is a dummy variable, 0 = otherwise	0.541	1	0.498
Lagged variable	1 = if a lagged ownership variable is used for estimation, 0 = otherwise	0.101	0	0.301
With an interaction term(s)	1 = if estimation is carried out with an interaction term(s) of the ownership variable, 0 = otherwise	0.085	0	0.278
Efficiency	1 = if efficiency is adopted as the benchmark index of the firm performance variable, 0 = otherwise	0.308	0	0.462
Productivity	1 = if productivity is adopted as the benchmark index of the firm performance variable, 0 = otherwise	0.243	0	0.429
Firm value	1 = if firm value is adopted as the benchmark index of the firm performance variable, 0 = otherwise	0.128	0	0.334
Other firm performance	1 = if a performance measure other than sale/output and the above indices is adopted as the benchmark index of the firm performance variable, 0 = otherwise	0.056	0	0.229
Mining and manufacturing industries	1 = if target industry is the mining and manufacturing industries, 0 = otherwise	0.388	0	0.487
Service industry	1 = if target industry is the service industry, 0 = otherwise	0.021	0	0.144
First year of estimation	First year of estimation period	1995.892	1995	3.897
Length of estimation	Years of estimation period	4.166	4	2.932
Cross-section data	1 = if cross-section data is employed for empirical analysis, 0 = otherwise	0.452	0	0.498
Commercial database	1 = if data employed for empirical analysis is based on a commercial database, 0 = otherwise	0.357	0	0.479
Original enterprise survey	1 = if data employed for empirical analysis is based on an original enterprise survey, 0 = otherwise	0.276	0	0.447

Variable name	Definition	Descriptive statistics		
		Mean	Median	S.D.
FE	1 = if fixed-effects panel estimator is used for estimation, 0 = otherwise	0.180	0	0.385
RE	1 = if random-effects panel estimator is used for estimation, 0 = otherwise	0.072	0	0.258
Robust	1 = if robust estimator is used for estimation, 0 = otherwise	0.058	0	0.235
GMM	1 = if GMM estimator is used for estimation, 0 = otherwise	0.023	0	0.150
Other estimators	1 = if an estimator other than OLS and the above estimators is used for estimation, 0 = otherwise	0.050	0	0.219
IV/2SLS/3SLS	1 = if instrumental variable method or 2SLS or 3SLS is used for estimation, 0 = otherwise	0.127	0	0.333
Difference model	1 = if difference model is used for estimation, 0 = otherwise	0.155	0	0.362
Translog model	1 = if translog model is used for estimation, 0 = otherwise	0.168	0	0.374
Treatment for selection bias	1 = if estimation treats for the selection bias of privatized companies, 0 = otherwise	0.071	0	0.257
Market competition	1 = if estimation simultaneously controls for the degree of market competition, 0 = otherwise	0.119	0	0.324
Location fixed effects	1 = if estimation simultaneously controls for location fixed effects, 0 = otherwise	0.295	0	0.456
Industry fixed effects	1 = if estimation simultaneously controls for industry fixed effects, 0 = otherwise	0.627	1	0.484
Time fixed effects	1 = if estimation simultaneously controls for time fixed effects, 0 = otherwise	0.481	0	0.500
Russia	Proportion of Russian firm samples in observations used for estimation	0.208	0	0.398
Poland	Proportion of Polish firm samples in observations used for estimation	0.069	0	0.234
Hungary	Proportion of Hungarian firm samples in observations used for estimation	0.067	0	0.230
Ukraine	Proportion of Ukrainian firm samples in observations used for estimation	0.068	0	0.247
Other CEE and FSU countries	Proportion of firm samples other than Czech Republic and the above countries in observations used for estimation	0.220	0	0.402
CEE countries	Proportion of CEE firm samples in observations used for estimation[a]	0.705	1.000	0.450
Voucher privatization countries	Proportion of firm samples in countries with voucher privatization as the primary method in observations used for estimation[a]	0.662	1.000	0.455
MEBO privatization countries	Proportion of firm samples in countries with MEBO privatization as the primary method in observations used for estimation[a]	0.119	0.000	0.308
Direct-sale privatization countries	Proportion of firm samples in countries with direct-sale privatization as the primary method in observations used for estimation[a]	0.218	0.000	0.388
Slow-speed privatization countries	Proportion of firm samples in countries where the private sector share in GDP is less than 70% in 2010 in observations used for estimation a [Note: Should "a" be superscript h	0.300	0.000	0.452
√ Degree of freedom	Root of degree of freedom of the estimated model	50.226	26.842	63.555
Quality level	Ten-point scale of the quality level of the study[b]	4.272	4	3.034

Notes:

[a] Countries in this category correspond with those in Table 1.

[b] See the Appendix for more details.

Source: Authors' calculation.

Table 6. Meta-regression analysis using the aggregated category of ownership variable: base-line estimation

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (State)							
All domestic outsider investors	0.0187 *	0.0161	0.0174	-0.0056	0.0100	0.0101	0.0088
	(0.011)	(0.013)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Foreign investors	0.0596 ***	0.0648 ***	0.0406 ***	0.0730 ***	0.0459 ***	0.0461 ***	0.0427 ***
	(0.011)	(0.012)	(0.014)	(0.015)	(0.012)	(0.012)	(0.013)
All insiders	0.0204	0.0141	0.0242 **	0.0141	0.0073	0.0074	0.0057
	(0.019)	(0.013)	(0.012)	(0.013)	(0.017)	(0.017)	(0.017)
Other characteristics of ownership variable							
Dummy variable (Ownership share)	-0.0130	-0.0226 **	-0.0160 ***	-0.0180	-0.0030	-0.0033	0.0023
	(0.010)	(0.011)	(0.005)	(0.015)	(0.018)	(0.018)	(0.021)
Lagged variable	0.0260	0.0269	-0.0064	0.0079	-0.0066	-0.0061	-0.0131 ***
	(0.017)	(0.022)	(0.010)	(0.020)	(0.006)	(0.007)	(0.002)
With an interaction term(s)	-0.0023	-0.0065	-0.0195 **	-0.0074	-0.0152	-0.0151	-0.0144
	(0.012)	(0.013)	(0.008)	(0.015)	(0.011)	(0.011)	(0.013)
Firm performance variable type (Sales/output)							
Efficiency	0.0053	-0.0025	-0.0058	0.0343 *	-0.0092	-0.0091	-0.0106
	(0.013)	(0.010)	(0.007)	(0.019)	(0.014)	(0.014)	(0.015)
Productivity	-0.0114	-0.0076	-0.0297 ***	0.0352 *	-0.0204	-0.0203	-0.0211
	(0.014)	(0.010)	(0.011)	(0.020)	(0.020)	(0.020)	(0.022)
Firm value	0.0382 **	0.0623 ***	0.0141	0.1555 ***	-0.0224	-0.0214	-0.0336
	(0.018)	(0.020)	(0.021)	(0.033)	(0.021)	(0.021)	(0.026)
Other firm performance	0.0234	0.0302	-0.0024	0.0877 **	-0.0040	-0.0030	-0.0206
	(0.026)	(0.028)	(0.013)	(0.043)	(0.022)	(0.023)	(0.022)
Target industry (Various industries)							
Mining and manufacturing industries	0.0136	0.0257 *	-0.0001	-0.0158	-0.0059	-0.0057	-0.0191
	(0.014)	(0.015)	(0.009)	(0.018)	(0.012)	(0.012)	(0.018)
Service industry	-0.0072	0.0097	0.0084	-0.0059	0.0040	0.0040	-0.0059
	(0.019)	(0.020)	(0.011)	(0.027)	(0.011)	(0.011)	(0.018)
Estimation period							
First year of estimation	-0.0039 ***	-0.0030 **	-0.0029 **	-0.0031	-0.0016	-0.0017	0.0005
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Length of estimation	-0.0042 *	-0.0041 **	-0.0028 **	0.0020	-0.0010	-0.0011	0.0032
	(0.002)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)	(0.003)
Data type (Panel data)							
Cross-section data	0.0285	0.0287	0.0042	0.0615 *	0.0109	0.0104	0.0285 ***
	(0.024)	(0.021)	(0.015)	(0.034)	(0.015)	(0.015)	(0.010)
Data source (Official statistics)							
Commercial database	0.0230	0.0130	-0.0123	-0.0246	0.0091	0.0098	-0.0358 ***
	(0.017)	(0.018)	(0.014)	(0.024)	(0.015)	(0.015)	(0.012)
Original enterprise survey	0.0005	-0.0123	-0.0289	0.0277	-0.0017	-0.0015	dropped
	(0.018)	(0.018)	(0.024)	(0.028)	(0.019)	(0.019)	
Estimator (OLS)							
FE	0.0229 **	0.0336 ***	-0.0002	0.0215	-0.0019	-0.0018	-0.0009
	(0.011)	(0.012)	(0.010)	(0.016)	(0.014)	(0.014)	(0.017)
RE	0.0224 *	0.0315 ***	0.0090	0.0112	0.0150 *	0.0149 *	0.0168 *
	(0.012)	(0.012)	(0.009)	(0.023)	(0.009)	(0.009)	(0.010)
Robust	-0.0127	-0.0267 *	-0.0216	-0.0844 ***	0.0071 **	0.0070 **	0.0079
	(0.013)	(0.016)	(0.018)	(0.028)	(0.004)	(0.004)	(0.005)
GMM	-0.0224	-0.0196	-0.0183	-0.0643 **	-0.0113	-0.0118	-0.0040
	(0.025)	(0.031)	(0.012)	(0.025)	(0.015)	(0.016)	(0.014)
Other estimators	0.0256	0.0152	-0.0150 *	0.1236 ***	0.0069	0.0070	0.0069
	(0.021)	(0.019)	(0.008)	(0.036)	(0.015)	(0.015)	(0.017)
IV/2SLS/3SLS	-0.0120	-0.0072	0.0091	-0.0110	-0.0219 **	-0.0219 **	-0.0225 **
	(0.011)	(0.012)	(0.006)	(0.023)	(0.010)	(0.010)	(0.010)
Equation type (Models other than listed below)							
Difference model	-0.0064	-0.0064	0.0070	0.0346	-0.0553 **	-0.0540 **	-0.0865 **
	(0.016)	(0.022)	(0.014)	(0.027)	(0.027)	(0.027)	(0.038)
Translog model	-0.0026	-0.0002	-0.0035	0.0409 *	0.0006	0.0007	-0.0065
	(0.012)	(0.012)	(0.007)	(0.021)	(0.012)	(0.012)	(0.009)
Treatment for selection bias of privatized firms							
Treatment for selection bias	-0.0008	-0.0065	0.0096	-0.0461	0.0128	0.0126	0.0095
	(0.013)	(0.017)	(0.018)	(0.031)	(0.011)	(0.011)	(0.012)
Control variable							
Market competition	-0.0007	0.0087	-0.0008	-0.0124	0.0056	0.0060	-0.0079
	(0.014)	(0.019)	(0.009)	(0.019)	(0.010)	(0.010)	(0.009)
Location fixed effects	0.0083	0.0099	0.0151	-0.0227	0.0001	0.0004	-0.0049
	(0.013)	(0.014)	(0.011)	(0.015)	(0.010)	(0.010)	(0.016)
Industry fixed effects	0.0181	0.0269 *	0.0234 ***	0.0257	0.0178	0.0175	0.0236
	(0.012)	(0.014)	(0.008)	(0.018)	(0.012)	(0.012)	(0.018)
Time fixed effects	0.0001	-0.0033	-0.0023	0.0170	-0.0160	-0.0159	-0.0236 **
	(0.017)	(0.016)	(0.014)	(0.032)	(0.012)	(0.012)	(0.011)
Proportion of sample firms in observations (Czech Republic)							
Russia	0.0075	0.0085	0.0108	-0.0378	-0.0046	-0.0044	-0.0023
	(0.019)	(0.020)	(0.026)	(0.025)	(0.015)	(0.015)	(0.022)
Poland	0.0056	0.0017	0.0307 *	0.0346	0.0241	0.0231	0.0439
	(0.024)	(0.023)	(0.017)	(0.042)	(0.033)	(0.033)	(0.049)
Hungary	0.0167	-0.0028	-0.0014	0.0109	0.0216	0.0219	0.0081
	(0.021)	(0.021)	(0.014)	(0.032)	(0.018)	(0.018)	(0.020)
Ukraine	0.0274	0.0287	-0.0084	0.0447 *	0.0197	0.0206	-0.0063
	(0.019)	(0.019)	(0.017)	(0.026)	(0.024)	(0.024)	(0.024)
Other CEE and FSU countries	0.0151	0.0112	0.0029	-0.0048	0.0125	0.0125	0.0125
	(0.015)	(0.016)	(0.014)	(0.026)	(0.017)	(0.017)	(0.036)
Degree of freedom and research quality							
√Degree of freedom	-0.0001	-0.0001 **	-0.0001	-0.0002	-0.0002 ***	-0.0002 ***	-0.0002 **
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Quality level	-0.0013	-	-0.0012	-0.0049 **	0.0017	0.0017	dropped
	(0.002)		(0.001)	(0.002)	(0.002)	(0.002)	
Intercept	7.7500 ***	6.0188 **	5.9049 ***	6.1382	3.1985	3.3363	-0.9048
	(2.832)	(2.978)	(2.266)	(4.471)	(2.396)	(2.442)	(2.466)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.154	0.229	0.364	0.529	-	0.049	0.012

(b) Dependent variable —t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13] [c]	[14] [d]
Ownership variable type (State)							
All domestic outsider investors	0.7370 *	0.5100	3.3549 *	0.6633	0.4266	0.4335	0.3964
	(0.412)	(0.433)	(1.965)	(0.745)	(0.381)	(0.383)	(0.386)
Foreign investors	2.7076 ***	2.2623 ***	7.8449 ***	4.1089 ***	1.5008 ***	1.5294 ***	1.3910 ***
	(0.719)	(0.532)	(2.428)	(1.130)	(0.403)	(0.406)	(0.411)
All insiders	0.6971	0.4122	3.6765 **	0.6887	0.6344 *	0.6368	0.6275
	(0.478)	(0.457)	(1.851)	(0.666)	(0.385)	(0.388)	(0.387)
Other characteristics of ownership variable							
Dummy variable (Ownership share)	-0.7162	-0.2935	-4.3007 ***	-0.9045	-0.5982	-0.6156	-0.5134
	(0.528)	(0.452)	(0.959)	(1.093)	(0.508)	(0.508)	(0.527)
Lagged variable	0.6150	0.6813	-0.3927	-0.8980	-0.3448 **	-0.3243 **	-0.4071 ***
	(0.740)	(0.724)	(1.893)	(1.031)	(0.157)	(0.165)	(0.156)
With an interaction term(s)	0.1743	0.1695	-6.3883 ***	0.0260	-1.7996 *	-1.7513 *	-2.0074 *
	(0.950)	(1.181)	(2.130)	(1.003)	(1.075)	(1.064)	(1.164)
Firm performance variable type (Sales/output)							
Efficiency	-0.3797	-0.2873	-2.3972 **	0.1356	-0.3781	-0.3838	-0.3537
	(0.537)	(0.462)	(1.140)	(1.239)	(0.242)	(0.245)	(0.242)
Productivity	-0.5390	-0.4674	-6.6233 ***	-0.1231	-0.4277	-0.4328	-0.4101
	(0.493)	(0.424)	(1.965)	(1.168)	(0.314)	(0.316)	(0.322)
Firm value	0.9711	1.1774	-5.2279 ***	4.2780 ***	-0.8732 *	-0.8578 *	-0.9237
	(0.775)	(0.762)	(1.953)	(1.572)	(0.522)	(0.518)	(0.569)
Other firm performance	-0.2276	0.1551	-1.2889	2.5699	-0.3101	-0.2722	-0.4151
	(0.822)	(0.833)	(2.104)	(2.217)	(0.487)	(0.495)	(0.494)
Target industry (Various industries)							
Mining and manufacturing industries	0.0190	1.1417 *	-5.5161 ***	-1.9021 *	-0.5920	-0.5432	-1.4062
	(0.756)	(0.641)	(1.558)	(1.100)	(0.706)	(0.730)	(1.280)
Service industry	-2.8602	-1.2178	-2.3693	-3.5724 *	-1.1892	-1.1147	-2.2170 **
	(1.790)	(1.056)	(1.792)	(1.922)	(0.817)	(0.853)	(1.104)
Estimation period							
First year of estimation	-0.1813 **	-0.1929 ***	-0.2204	-0.4037 ***	-0.1964	-0.1964 *	-0.1905
	(0.073)	(0.068)	(0.169)	(0.152)	(0.120)	(0.116)	(0.168)
Length of estimation	-0.1106	-0.2300 *	-0.4318 **	-0.0283	-0.1277	-0.1278	-0.0628
	(0.126)	(0.122)	(0.217)	(0.186)	(0.094)	(0.092)	(0.181)
Data type (Panel data)							
Cross-section data	0.5236	0.5979	-6.1465 *	0.6833	0.6044	0.5797	0.7544
	(0.633)	(0.518)	(3.138)	(1.831)	(0.604)	(0.599)	(0.730)
Data source (Official statistics)							
Commercial database	-0.4609	-0.6958	-8.9647 ***	-3.6659 **	-0.8434	-0.8639	-0.7836
	(0.933)	(0.874)	(2.443)	(1.648)	(0.744)	(0.804)	(0.638)
Original enterprise survey	-0.5335	-1.8566 *	-6.3031 **	0.6950	-1.0309	-1.0346	dropped
	(1.063)	(1.086)	(2.561)	(1.647)	(0.933)	(0.935)	
Estimator (OLS)							
FE	0.8154	0.9854 *	-3.2907	2.5346 **	-0.9682	-0.9341	-1.0773
	(0.602)	(0.557)	(3.024)	(1.146)	(0.948)	(0.936)	(1.028)
RE	1.5846 **	2.5419 **	0.6319	2.4264	1.3254 *	1.3266 *	1.3177 *
	(0.797)	(1.011)	(2.586)	(1.726)	(0.753)	(0.756)	(0.763)
Robust	-0.1547	0.3998	-3.2753	-3.0400 **	0.1697 *	0.1689 *	0.1775 *
	(0.476)	(0.648)	(2.317)	(1.403)	(0.096)	(0.095)	(0.107)
GMM	-2.0299 **	-1.5349	-5.0272 *	-3.9123 ***	-1.7765	-1.7576	-1.8722
	(0.971)	(1.019)	(2.822)	(1.493)	(1.145)	(1.128)	(1.262)
Other estimators	0.3274	0.8027	-7.8662 ***	3.4005 *	-1.3309	-1.3569	-1.1938
	(1.291)	(0.985)	(2.325)	(1.967)	(1.177)	(1.175)	(1.255)
IV/2SLS/3SLS	-0.0463	0.3626	3.8150 ***	0.6552	-0.2160	-0.2123	-0.2273
	(0.753)	(0.905)	(1.094)	(1.559)	(0.363)	(0.368)	(0.360)
Equation type (Models other than listed below)							
Difference model	0.0512	-0.7736	0.9768	0.9313	-1.9892	-1.9283	-2.3950
	(1.021)	(0.946)	(2.377)	(1.670)	(1.452)	(1.418)	(1.721)
Translog model	0.4030	0.2681	0.9594	2.2487	0.0498	0.1421	-0.4770
	(0.996)	(0.997)	(1.389)	(1.511)	(0.462)	(0.505)	(0.438)
Treatment for selection bias of privatized firms							
Treatment for selection bias	-0.7540	-0.6751	2.5709	-3.9125 **	0.3218	0.3256	0.2369
	(0.659)	(0.722)	(3.167)	(1.847)	(0.342)	(0.343)	(0.355)
Control variable							
Market competition	-0.2186	0.2052	-2.3155	-1.9755	-1.1516 *	-1.1191	-1.2321 *
	(1.253)	(0.797)	(1.756)	(1.538)	(0.692)	(0.723)	(0.730)
Location fixed effects	0.2210	-0.0459	-0.1574	-0.4430	0.0078	-0.0485	0.3891
	(0.668)	(0.557)	(2.091)	(1.268)	(0.782)	(0.772)	(0.928)
Industry fixed effects	1.4270 **	1.4888 **	4.8539 ***	2.5885 **	0.6050	0.6810	0.1376
	(0.652)	(0.641)	(1.735)	(1.169)	(0.697)	(0.684)	(0.849)
Time fixed effects	0.2344	0.2417	-1.2020	0.6769	0.0260	0.0904	-0.5722
	(0.890)	(0.662)	(1.966)	(1.850)	(0.659)	(0.668)	(0.733)
Proportion of sample firms in observations (Czech Republic)							
Russia	0.9441	1.7882	6.2227 **	-0.7303	0.6829	0.7602	-0.1395
	(1.084)	(1.469)	(2.597)	(2.010)	(1.232)	(1.142)	(2.248)
Poland	1.3689	0.9148	6.2682 ***	3.5384	2.9005 **	2.7353 **	4.2817 **
	(1.311)	(1.298)	(1.977)	(2.448)	(1.312)	(1.280)	(2.026)
Hungary	1.8178	0.9609 ***	-0.2073	3.0367	2.6147 *	2.5345 *	3.5396 *
	(1.709)	(1.227)	(2.112)	(2.312)	(1.430)	(1.387)	(1.980)
Ukraine	0.4974	0.0838	-1.4166	-0.3649	0.1825	0.1944	0.5003
	(0.984)	(0.820)	(1.816)	(1.591)	(1.158)	(1.131)	(1.933)
Other CEE and FSU countries	1.3532	0.8091	1.6270	0.7880	2.3616	2.2209	3.6953
	(0.871)	(0.776)	(1.689)	(1.639)	(1.470)	(1.372)	(2.503)
Degree of freedom and research quality							
√Degree of freedom	0.0084	0.0041	-0.0113	-0.0051	0.0064	0.0059	0.0098
	(0.008)	(0.005)	(0.008)	(0.012)	(0.006)	(0.006)	(0.009)
Quality level	-0.0005	-	-0.0049	-0.2780 *	0.0738	0.0755	dropped
	(0.093)		(0.232)	(0.163)	(0.146)	(0.144)	
Intercept	360.4910 **	384.3074 ***	451.7466	806.4356 ***	392.8722	392.6808 *	381.4948
	(145.186)	(136.261)	(335.303)	(303.524)	(239.717)	(230.857)	(336.082)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.216	0.291	0.590	0.393	-	0.095	0.040

Notes:

[a] Breusch–Pagan test: $\chi^2=1120.40, p=0.000$

[b] Hausman test: $\chi^2=68.48, p=0.000$

[c] Breusch–Pagan test: $\chi^2=1277.86, p=0.000$

[d] Hausman test: $\chi^2=155.95, p=0.000$

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. See Table 5 for definition and descriptive statistics of meta-independent variables.

Table 7. Meta-regression analysis using the basic category of ownership variable: base-line estimation

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [1/SE]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6][a]	[7][b]
Ownership variable type (Unspecified government)							
Central government	0.0084	0.0151	-0.0264	0.0029	0.0317 *	0.0317 *	0.0318 *
	(0.025)	(0.030)	(0.021)	(0.031)	(0.016)	(0.016)	(0.017)
Regional/local government	0.0010	0.0118	-0.0472 **	0.0282	0.0054	0.0055	0.0029
	(0.013)	(0.020)	(0.019)	(0.034)	(0.010)	(0.010)	(0.011)
Unspecified domestic outsider investors	0.0390 *	0.0557 *	-0.0040	-0.0091	0.0413 **	0.0414 **	0.0388 **
	(0.020)	(0.030)	(0.016)	(0.032)	(0.018)	(0.019)	(0.018)
Domestic outsider individual investors	0.0177	0.0216	0.0183 *	-0.0067	0.0120	0.0120	0.0114
	(0.017)	(0.019)	(0.011)	(0.016)	(0.017)	(0.017)	(0.017)
Unspecified domestic outsider institutional investors	0.0211	0.0165	0.0268 *	-0.0012	0.0065	0.0065	0.0052
	(0.015)	(0.017)	(0.014)	(0.017)	(0.015)	(0.015)	(0.015)
Unspecified domestic financial institutions	-0.0208	-0.0339	-0.0237	-0.0910 ***	-0.0077	-0.0078	-0.0075
	(0.030)	(0.026)	(0.026)	(0.026)	(0.028)	(0.028)	(0.029)
Domestic banks	0.0154	0.0299	-0.0076	0.0371 **	0.0022	0.0023	0.0004
	(0.021)	(0.022)	(0.019)	(0.018)	(0.025)	(0.025)	(0.026)
Domestic non-bank financial institutions	0.0201	0.0145	0.0009	-0.0022	0.0078	0.0079	0.0057
	(0.014)	(0.017)	(0.012)	(0.021)	(0.014)	(0.014)	(0.015)
Domestic company groups and holdings	0.0409	0.0514 *	0.0166	-0.0022	0.0044	0.0048	-0.0014
	(0.025)	(0.029)	(0.025)	(0.026)	(0.011)	(0.011)	(0.010)
Other domestic non-financial companies	0.0378 ***	0.0323 *	0.0144	0.0231 *	0.0326 **	0.0326 **	0.0320 *
	(0.013)	(0.017)	(0.015)	(0.013)	(0.016)	(0.017)	(0.017)
Foreign investors	0.0605 ***	0.0659 ***	0.0346 ***	0.0726 ***	0.0477 ***	0.0479 ***	0.0441 ***
	(0.011)	(0.012)	(0.013)	(0.016)	(0.012)	(0.013)	(0.013)
Unspecified insiders	0.0282 *	0.0211	0.0223 *	0.0043	0.0168	0.0169	0.0150
	(0.015)	(0.015)	(0.012)	(0.014)	(0.014)	(0.014)	(0.014)
Managers	0.0427	0.0262	0.0448 **	0.0290 *	0.0339	0.0340	0.0330
	(0.028)	(0.018)	(0.020)	(0.016)	(0.028)	(0.028)	(0.029)
Employees	-0.0188	-0.0134	-0.0152	-0.0185	-0.0286	-0.0286	-0.0297
	(0.026)	(0.020)	(0.021)	(0.040)	(0.025)	(0.025)	(0.026)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.177	0.253	0.379	0.545	-	0.060	0.019

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [1/SE]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13][c]	[14][d]
Ownership variable type (Unspecified government)							
Central government	-1.0083	-1.6244	-12.0835 ***	-4.6959	1.5350 **	1.4635 **	1.7026 **
	(1.319)	(1.790)	(3.904)	(3.154)	(0.648)	(0.630)	(0.743)
Regional/local government	-1.4657	-1.7309	-22.7647 ***	-10.7130	-0.0706	-0.1255	0.0608
	(1.620)	(1.954)	(4.814)	(8.253)	(0.525)	(0.580)	(0.407)
Unspecified domestic outsider investors	0.1977	0.1368	-5.2403 **	-2.9302	1.0507 ***	1.0431 ***	1.0646 ***
	(0.456)	(0.558)	(2.391)	(1.932)	(0.354)	(0.353)	(0.366)
Domestic outsider individual investors	0.8849 *	0.6514	2.2489	0.5010	0.6885	0.6867	0.6917
	(0.508)	(0.615)	(1.561)	(0.856)	(0.514)	(0.518)	(0.518)
Unspecified domestic outsider institutional investors	0.8698	0.9711	3.9893	0.6347	0.8009	0.8021	0.7943
	(0.655)	(0.664)	(2.556)	(1.251)	(0.518)	(0.523)	(0.524)
Unspecified domestic financial institutions	0.3081	-0.1534	1.9979	-1.1509	-0.0291	-0.0252	-0.0439
	(0.778)	(0.673)	(2.239)	(1.193)	(0.668)	(0.673)	(0.675)
Domestic banks	-0.1210	0.0954	-2.9715	1.4162 **	0.0141	0.0088	0.0193
	(0.529)	(0.637)	(2.437)	(0.708)	(0.532)	(0.535)	(0.541)
Domestic non-bank financial institutions	-0.0552	-0.2552	0.0180	-0.6149	0.2292	0.2264	0.2276
	(0.508)	(0.678)	(1.933)	(0.984)	(0.441)	(0.444)	(0.448)
Domestic company groups and holdings	0.8224	1.2466	-2.8489	-1.5055	0.3650	0.3727	0.3347
	(0.771)	(1.207)	(1.938)	(1.298)	(0.419)	(0.427)	(0.412)
Other domestic non-financial companies	0.9476 **	0.6415	-1.6690	1.7363 **	1.0796 **	1.0724 **	1.0903 **
	(0.464)	(0.609)	(2.357)	(0.716)	(0.457)	(0.460)	(0.462)
Foreign investors	2.5057 ***	2.1458 ***	5.1475 **	3.6867 ***	1.5764 ***	1.6086 ***	1.4906 ***
	(0.619)	(0.516)	(2.019)	(1.052)	(0.419)	(0.422)	(0.431)
Unspecified insiders	0.9464 *	1.0049 *	2.2903	-0.2122	0.9635 **	0.9649 **	0.9561 **
	(0.524)	(0.527)	(1.956)	(0.942)	(0.404)	(0.408)	(0.405)
Managers	0.6779	0.3475	2.6387	1.0620	1.0769 **	1.0603 **	1.1289 **
	(0.578)	(0.591)	(2.274)	(0.708)	(0.536)	(0.539)	(0.541)
Employees	-0.4188	-1.1535	-1.2742	-2.0662 *	0.0609	0.0528	0.0810
	(0.529)	(0.712)	(2.615)	(1.246)	(0.497)	(0.499)	(0.507)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.224	0.300	0.633	0.414	-	0.098	0.041

Notes:

[a] Breusch–Pagan test: $\chi^2 = 1127.38, p = 0.000$

[b] Hausman test: $\chi^2 = 77.97, p = 0.000$

[c] Breusch–Pagan test: $\chi^2 = 1231.14, p = 0.000$

[d] Hausman test: $\chi^2 = 178.46, p = 0.000$

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.

Table 8. Meta-regression analysis of the idiosyncrasy of CEE countries: estimation using the aggregated category of ownership variable

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (State)							
All domestic outsider investors	0.0480 ***	0.0487 **	0.0337	0.0071	0.0182	0.0185	0.0152
	(0.016)	(0.021)	(0.026)	(0.032)	(0.012)	(0.012)	(0.011)
Foreign investors	0.1143 ***	0.1367 ***	0.0898 ***	0.1209 ***	0.0865 ***	0.0868 ***	0.0851 **
	(0.024)	(0.022)	(0.023)	(0.031)	(0.029)	(0.029)	(0.034)
All insiders	0.0479	0.0127	0.0227	0.0300	0.0231	0.0233	0.0208
	(0.033)	(0.027)	(0.033)	(0.034)	(0.025)	(0.025)	(0.024)
Interaction term							
All domestic outsider investors × CEE countries	-0.0454 **	-0.0455 *	-0.0253	-0.0158	-0.0113	-0.0116	-0.0084
	(0.022)	(0.027)	(0.028)	(0.035)	(0.019)	(0.019)	(0.018)
Foreign investors × CEE countries	-0.0737 ***	-0.0886 ***	-0.0603 **	-0.0565 *	-0.0544 *	-0.0546 *	-0.0565
	(0.025)	(0.024)	(0.025)	(0.032)	(0.031)	(0.031)	(0.037)
All insiders × CEE countries	-0.0416	0.0082	-0.0015	-0.0259	-0.0268	-0.0269	-0.0259
	(0.036)	(0.031)	(0.035)	(0.034)	(0.029)	(0.030)	(0.029)
CEE countries	0.0340 **	0.0281 *	0.0444 **	0.0309	0.0399 **	0.0391 **	0.0662
	(0.013)	(0.014)	(0.021)	(0.032)	(0.019)	(0.018)	(0.042)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.163	0.248	0.373	0.519	-	0.048	0.008

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13] [c]	[14] [d]
Ownership variable type (State)							
All domestic outsider investors	1.5947 **	1.4006 **	5.9944	1.5255	0.5396 *	0.5688 *	0.4531
	(0.680)	(0.610)	(3.875)	(1.841)	(0.309)	(0.315)	(0.309)
Foreign investors	5.6981 ***	5.6708 **	21.2447 ***	6.8343 **	2.1282 ***	2.2072 ***	1.9391 ***
	(2.055)	(2.210)	(3.505)	(2.742)	(0.567)	(0.583)	(0.586)
All insiders	1.5219 *	0.9194 *	5.6822	1.5556	0.8122 *	0.8350 *	0.7406
	(0.830)	(0.493)	(4.793)	(1.675)	(0.486)	(0.494)	(0.484)
Interaction term							
All domestic outsider investors × CEE countries	-1.4603 *	-1.3355 *	-4.9372	-1.3505	-0.1590	-0.1894	-0.0749
	(0.815)	(0.803)	(4.530)	(1.951)	(0.547)	(0.553)	(0.550)
Foreign investors × CEE countries	-3.7021 *	-4.2192 *	-16.5619 ***	-3.2993	-0.8187	-0.8744	-0.7204
	(2.183)	(2.298)	(3.799)	(2.916)	(0.777)	(0.795)	(0.779)
All insiders × CEE countries	-1.0029	-0.3403	-3.2844	-1.3911	-0.2741	-0.3003	-0.1893
	(0.955)	(0.652)	(5.099)	(1.796)	(0.659)	(0.665)	(0.665)
CEE countries	1.4257	1.0500	9.6088 ***	3.1031	1.3799	1.2871	2.0263
	(0.878)	(0.666)	(3.362)	(2.094)	(1.038)	(0.964)	(1.908)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.221	0.302	0.601	0.387	-	0.078	0.028

Notes:

[a] Breusch–Pagan test: χ^2=896.85, p=0.000

[b] Hausman test: χ^2=73.65, p=0.000

[c] Breusch–Pagan test: χ^2=1243.91, p=0.000

[d] Hausman test: χ^2=149.01, p=0.000

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.

Table 9. Meta-regression analysis of the idiosyncrasy of voucher privatization countries: estimation using the aggregated category of ownership variable

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (State)							
All domestic outsider investors	0.0529 ***	0.0511 ***	0.0228 **	0.0205	0.0527 ***	0.0528 ***	0.0509 ***
	(0.012)	(0.015)	(0.011)	(0.022)	(0.012)	(0.010)	(0.010)
Foreign investors	0.0564 ***	0.0660 ***	0.0261 *	0.0844 ***	0.0283 *	0.0294 ***	0.0172 *
	(0.017)	(0.018)	(0.014)	(0.030)	(0.018)	(0.009)	(0.009)
All insiders	0.0194 *	0.0439 ***	0.0212 *	0.0078 *	0.0173 *	0.0175 *	0.0150
	(0.011)	(0.016)	(0.011)	(0.011)	(0.009)	(0.009)	(0.010)
Interaction term							
All domestic outsider investors × Voucher privatization countries	-0.0440 **	-0.0456 *	-0.0128	-0.0308	-0.0521 ***	-0.0522 ***	-0.0507 ***
	(0.019)	(0.025)	(0.017)	(0.028)	(0.020)	(0.012)	(0.012)
Foreign investors × Voucher privatization countries	0.0090	0.0048	0.0431 **	-0.0072	0.0350	0.0338 ***	0.0482 ***
	(0.021)	(0.023)	(0.019)	(0.034)	(0.025)	(0.012)	(0.012)
All insiders × Voucher privatization countries	0.0056	-0.0510 *	0.0013	0.0120	-0.0126	-0.0127	-0.0110
	(0.034)	(0.029)	(0.029)	(0.028)	(0.031)	(0.012)	(0.012)
Voucher privatization countries	-0.0008	0.0157	-0.0329 *	0.0031	-0.0263	-0.0244 *	-0.0576 ***
	(0.016)	(0.018)	(0.018)	(0.034)	(0.020)	(0.013)	(0.020)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.159	0.235	0.377	0.517	-	0.047	0.011

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13] [c]	[14] [d]
Ownership variable type (State)							
All domestic outsider investors	2.1523 ***	1.8615 ***	3.4696 *	2.4447	2.0389 ***	2.0446 ***	2.0043 ***
	(0.592)	(0.606)	(1.956)	(1.801)	(0.637)	(0.638)	(0.373)
Foreign investors	2.8218 **	2.2100 ***	3.8810 *	6.1283 **	1.6552 *	1.6990 *	1.4715 ***
	(1.113)	(0.728)	(2.286)	(2.524)	(0.919)	(0.923)	(0.342)
All insiders	1.0585 *	1.3551 **	2.5830	1.3920	1.5045 **	1.4987 **	1.5069 ***
	(0.630)	(0.551)	(1.868)	(1.552)	(0.683)	(0.683)	(0.349)
Interaction term							
All domestic outsider investors × Voucher privatization countries	-1.9097 **	-1.8192 **	-0.5576	-2.3252	-2.0283 **	-2.0275 **	-2.0128 ***
	(0.769)	(0.859)	(2.451)	(1.988)	(0.795)	(0.797)	(0.426)
Foreign investors × Voucher privatization countries	-0.0096	0.1505	10.6914 ***	-2.5233	-0.0219	-0.0403	0.1078
	(1.423)	(1.049)	(3.159)	(2.629)	(1.021)	(1.026)	(0.438)
All insiders × Voucher privatization countries	-0.5166	-1.4793 **	1.0759	-0.8256	-1.2179	-1.2074	-1.2308 ***
	(0.851)	(0.656)	(4.003)	(1.857)	(0.804)	(0.806)	(0.444)
Voucher privatization countries	-0.6493	0.0677	-8.0449 ***	-0.0667	-1.5370	-1.3988	-2.2777 ***
	(0.912)	(0.730)	(2.953)	(2.431)	(1.097)	(1.051)	(0.733)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.219	0.286	0.594	0.390	-	0.098	0.039

Notes:

[a] Breusch–Pagan test: χ^2=1098.35, p=0.000

[b] Hausman test: χ^2=91.10, p=0.000

[c] Breusch–Pagan test: χ^2=1324.70, p=0.000

[d] Hausman test: χ^2=47.72, p=0.159

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.

Table 10. Meta-regression analysis of the idiosyncrasy of MEBO privatization countries: estimation using the aggregated category of ownership variable

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (State)							
All domestic outsider investors	0.0156	0.0133	0.0061	-0.0061	0.0080	0.0073	0.0081
	(0.012)	(0.014)	(0.013)	(0.014)	(0.013)	(0.013)	(0.013)
Foreign investors	0.0655 ***	0.0694 ***	0.0430 ***	0.0804 ***	0.0578 ***	0.0577 ***	0.0579 ***
	(0.012)	(0.013)	(0.016)	(0.018)	(0.012)	(0.013)	(0.012)
All insiders	0.0264	0.0090	0.0210	0.0189	0.0114	0.0104	0.0115
	(0.021)	(0.016)	(0.019)	(0.016)	(0.018)	(0.018)	(0.018)
Interaction term							
All domestic outsider investors × MEBO privatization countries	0.0242	0.0248	0.0200	0.0152	0.0367	0.0361	0.0367
	(0.026)	(0.030)	(0.015)	(0.026)	(0.031)	(0.032)	(0.031)
Foreign investors × MEBO privatization countries	-0.0462	-0.0397	-0.0166	-0.0032	-0.0835 ***	-0.1070 ***	-0.0819 ***
	(0.030)	(0.038)	(0.017)	(0.040)	(0.030)	(0.030)	(0.030)
All insiders × MEBO privatization countries	-0.0382	0.0120	0.0020	-0.0167	-0.0295	-0.0310	-0.0293
	(0.037)	(0.032)	(0.021)	(0.025)	(0.038)	(0.039)	(0.038)
MEBO privatization countries	0.0313	0.0220	0.0041	0.0022	0.0864 ***	0.1347 ***	0.0833 ***
	(0.020)	(0.028)	(0.015)	(0.037)	(0.028)	(0.036)	(0.028)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.159	0.231	0.363	0.515	-	0.044	0.007

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13] [c]	[14] [d]
Ownership variable type (State)							
All domestic outsider investors	0.4687	0.2616	0.8801	0.6199	0.3273	0.3367	0.3008
	(0.403)	(0.448)	(2.062)	(0.841)	(0.399)	(0.400)	(0.404)
Foreign investors	3.1397 ***	2.4301 ***	8.0491 ***	4.7872 ***	1.7929 ***	1.8296 ***	1.7132 ***
	(0.830)	(0.565)	(2.714)	(1.389)	(0.442)	(0.447)	(0.448)
All insiders	0.6463	0.2414	1.3559	0.6518	0.5883	0.5970	0.5611
	(0.458)	(0.416)	(2.373)	(0.724)	(0.389)	(0.391)	(0.390)
Interaction term							
All domestic outsider investors × MEBO privatization countries	1.5012	1.8745	3.8744	0.8927	1.3825	1.3706	1.4114
	(1.187)	(1.401)	(2.698)	(2.051)	(1.192)	(1.199)	(1.201)
Foreign investors × MEBO privatization countries	-2.1237	-1.6721	-4.3168	-0.4557	-1.8739 *	-1.8051	-2.1461 *
	(1.345)	(1.414)	(3.096)	(2.388)	(1.102)	(1.113)	(1.107)
All insiders × MEBO privatization countries	-0.3624	0.7337	2.9605	0.6802	0.1769	0.1331	0.2999
	(0.952)	(1.091)	(3.050)	(1.604)	(1.106)	(1.103)	(1.141)
MEBO privatization countries	2.1539 **	1.2591	0.5309	0.6406	4.1625 ***	3.9137 ***	5.0217 ***
	(0.964)	(1.152)	(2.908)	(2.036)	(1.344)	(1.304)	(1.557)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.223	0.289	0.578	0.381	-	0.096	0.022

Notes:

[a] Breusch–Pagan test: χ^2=1103.65, p=0.000

[b] Hausman test: χ^2=94.95, p=0.000

[c] Breusch–Pagan test: χ^2=1348.50, p=0.000

[d] Hausman test: χ^2=439.83, p=0.000

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.

Table 11. Meta-regression analysis of the idiosyncrasy of direct-sale privatization countries: estimation using the aggregated category of ownership variable

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (State)							
All domestic outsider investors	0.0111	0.0072	0.0224 *	-0.0073	0.0027	0.0028	0.0018
	(0.012)	(0.016)	(0.011)	(0.015)	(0.013)	(0.013)	(0.014)
Foreign investors	0.0553 ***	0.0616 ***	0.0533 ***	0.0769 ***	0.0467 ***	0.0468 ***	0.0455 **
	(0.014)	(0.015)	(0.010)	(0.019)	(0.016)	(0.016)	(0.018)
All insiders	0.0175	0.0021	0.0296 **	0.0145	-0.0004	-0.0002	-0.0023
	(0.023)	(0.018)	(0.012)	(0.017)	(0.022)	(0.022)	(0.022)
Interaction term							
All domestic outsider investors × Direct-sale privatization countries	0.0521 **	0.0526 *	0.0008	0.0482	0.0581 ***	0.0579 **	0.0585 **
	(0.024)	(0.029)	(0.018)	(0.048)	(0.023)	(0.023)	(0.023)
Foreign investors × Direct-sale privatization countries	0.0246	0.0231	-0.0263	0.0136	0.0103	0.0111	0.0021
	(0.023)	(0.025)	(0.021)	(0.048)	(0.026)	(0.026)	(0.028)
All insiders × Direct-sale privatization countries	0.0278	0.0568 *	-0.0009	-0.0084	0.0476	0.0473	0.0493
	(0.035)	(0.032)	(0.027)	(0.048)	(0.030)	(0.030)	(0.030)
Direct-sale privatization countries	-0.0261	-0.0381 **	0.0243	-0.0092	-0.0193	-0.0198	-0.0150
	(0.017)	(0.018)	(0.018)	(0.046)	(0.024)	(0.024)	(0.031)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.154	0.231	0.363	0.516	-	0.045	0.009

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13] [c]	[14] [d]
Ownership variable type (State)							
All domestic outsider investors	0.4198	0.1795	4.9810 ***	0.3448	0.1175	0.1242	0.0897
	(0.450)	(0.492)	(1.608)	(0.802)	(0.416)	(0.418)	(0.420)
Foreign investors	2.4751 ***	2.0010 ***	10.5036 ***	3.5933 ***	1.3678 ***	1.3998 ***	1.2377 ***
	(0.790)	(0.575)	(1.804)	(1.065)	(0.401)	(0.404)	(0.406)
All insiders	0.7271	0.3138	6.1062 ***	0.8981	0.3306	0.3360	0.3115
	(0.505)	(0.539)	(1.641)	(0.823)	(0.429)	(0.432)	(0.431)
Interaction term							
All domestic outsider investors × Direct-sale privatization countries	1.8244 *	1.5999 *	-2.1961	3.5369	2.3581 **	2.3502 **	2.3778 **
	(0.958)	(0.888)	(2.547)	(3.441)	(0.998)	(0.999)	(1.027)
Foreign investors × Direct-sale privatization countries	1.4413	0.9601	-6.4624 *	3.6916	1.0623	1.0606	1.0597
	(1.598)	(1.094)	(3.272)	(4.077)	(1.442)	(1.445)	(1.498)
All insiders × Direct-sale privatization countries	0.8524	1.2875	-5.1380 *	-0.9933	1.9606 *	1.9499 *	1.9813 *
	(1.000)	(0.835)	(3.053)	(3.518)	(1.011)	(1.010)	(1.046)
Direct-sale privatization countries	-0.9745	-1.1446	6.4581 **	-1.1174	-1.7406	-1.6865	-2.0098
	(1.008)	(0.842)	(2.986)	(3.359)	(1.341)	(1.308)	(1.574)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.209	0.280	0.577	0.391	-	0.071	0.011

Notes:

[a] Breusch–Pagan test: χ^2=1090.06, p=0.000

[b] Hausman test: χ^2=76.09, p=0.000

[c] Breusch–Pagan test: χ^2=1373.35, p=0.000

[d] Hausman test: χ^2=47.34, p=0.051

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.

Table 12. Meta-regression analysis of the idiosyncrasy of slow-speed privatization countries: estimation using the aggregated category of ownership

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (State)							
All domestic outsider investors	0.0014	0.0017	0.0083	-0.0087	0.0049	0.0049	0.0048
	(0.014)	(0.017)	(0.012)	(0.013)	(0.015)	(0.015)	(0.016)
Foreign investors	0.0410 ***	0.0482 ***	0.0297 **	0.0644 ***	0.0311 ***	0.0313 ***	0.0275 **
	(0.012)	(0.012)	(0.013)	(0.015)	(0.012)	(0.012)	(0.013)
All insiders	0.0071	0.0215	0.0210 **	0.0047	-0.0047	-0.0045	-0.0063
	(0.018)	(0.014)	(0.010)	(0.010)	(0.018)	(0.018)	(0.019)
Interaction term							
All domestic outsider investors × Slow-speed privatization countries	0.0490 **	0.0494 *	0.0281	0.0159	0.0180	0.0183	0.0157
	(0.021)	(0.027)	(0.028)	(0.036)	(0.019)	(0.019)	(0.019)
Foreign investors × Slow-speed privatization countries	0.0727 ***	0.0876 ***	0.0598 **	0.0568 *	0.0578 *	0.0579 *	0.0608
	(0.025)	(0.023)	(0.025)	(0.032)	(0.032)	(0.032)	(0.038)
All insiders × Slow-speed privatization countries	0.0405	-0.0104	0.0024	0.0234	0.0307	0.0307	0.0306
	(0.036)	(0.031)	(0.035)	(0.035)	(0.030)	(0.030)	(0.030)
Slow-speed privatization countries	-0.0308 **	-0.0258 *	-0.0433 **	-0.0310	-0.0414 **	-0.0403 **	-0.0705 *
	(0.013)	(0.014)	(0.021)	(0.032)	(0.019)	(0.019)	(0.042)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.163	0.249	0.372	0.519	-	0.049	0.009

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13] [c]	[14] [d]
Ownership variable type (State)							
All domestic outsider investors	0.1343	0.0687	1.0421	0.1819	0.3593	0.3582	0.3567
	(0.455)	(0.542)	(2.203)	(0.629)	(0.496)	(0.498)	(0.502)
Foreign investors	2.0256 ***	1.5061 ***	4.6994 **	3.5412 ***	1.3013 ***	1.3256 ***	1.2077 **
	(0.751)	(0.459)	(2.076)	(1.240)	(0.497)	(0.502)	(0.499)
All insiders	0.5564	0.6494	2.3723	0.1885	0.5232	0.5203	0.5350
	(0.478)	(0.502)	(1.616)	(0.558)	(0.495)	(0.497)	(0.503)
Interaction term							
All domestic outsider investors × Slow-speed privatization countries	1.4589 *	1.3111 *	5.0914	1.3621	0.2288	0.2575	0.1517
	(0.797)	(0.787)	(4.571)	(1.971)	(0.551)	(0.557)	(0.555)
Foreign investors × Slow-speed privatization countries	3.6388 *	4.0240 *	16.6145 ***	3.3199	0.8445	0.8981	0.7610
	(2.162)	(2.232)	(3.798)	(2.941)	(0.782)	(0.800)	(0.784)
All insiders × Slow-speed privatization countries	0.9118	0.1307	3.3611	1.3154	0.3227	0.3465	0.2475
	(0.947)	(0.666)	(5.175)	(1.816)	(0.662)	(0.668)	(0.668)
Slow-speed privatization countries	-1.2734	-0.7717	-9.5625 ***	-3.0870	-1.3523	-1.2504	-2.0658
	(0.867)	(0.672)	(3.350)	(2.116)	(1.053)	(0.980)	(1.910)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.221	0.302	0.602	0.387	-	0.077	0.028

Notes:

[a] Breusch–Pagan test: χ^2=883.91, p=0.000

[b] Hausman test: χ^2=79.94, p=0.000

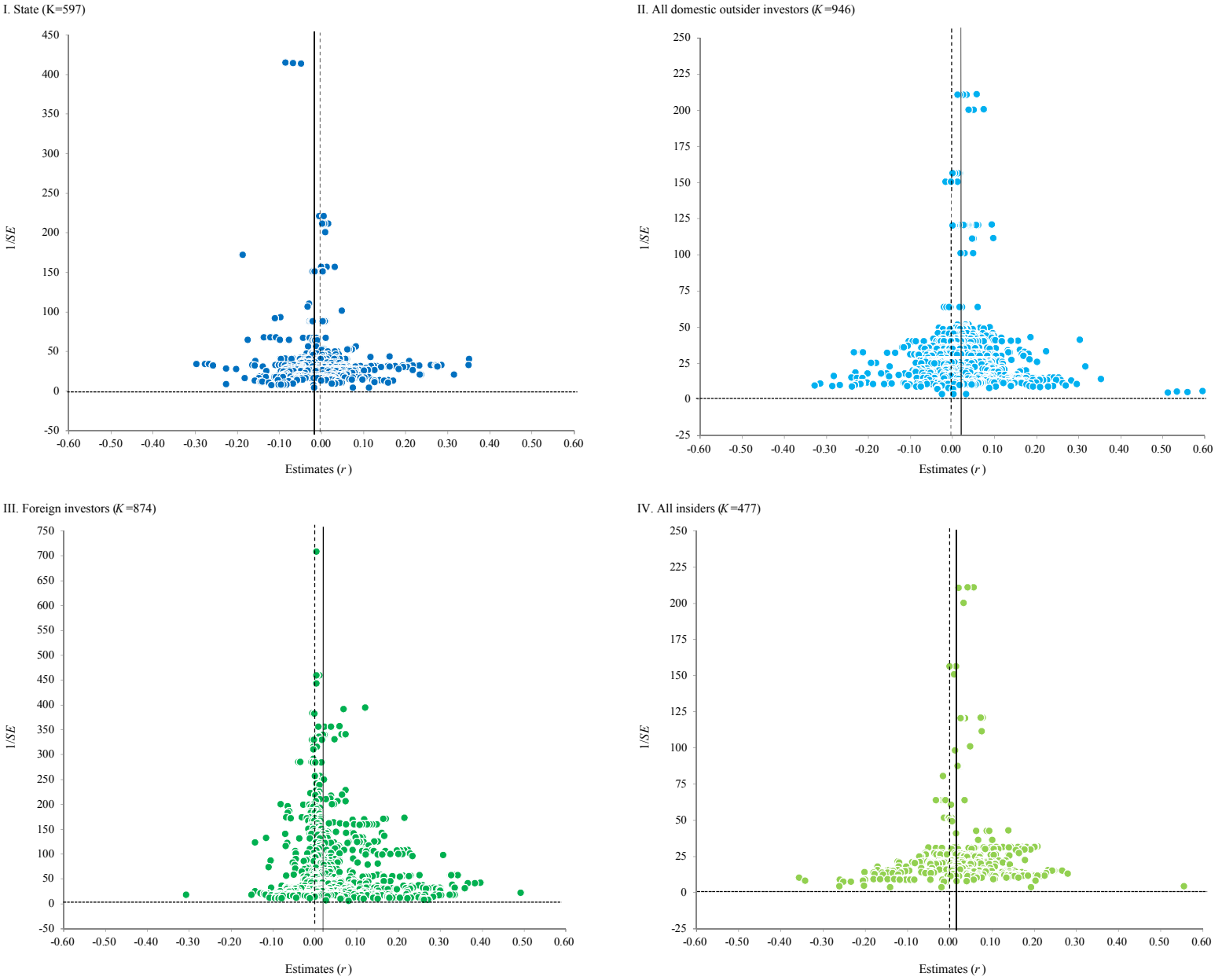
[c] Breusch–Pagan test: χ^2=1247.71, p=0.000

[d] Hausman test: χ^2=153.35, p=0.000

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

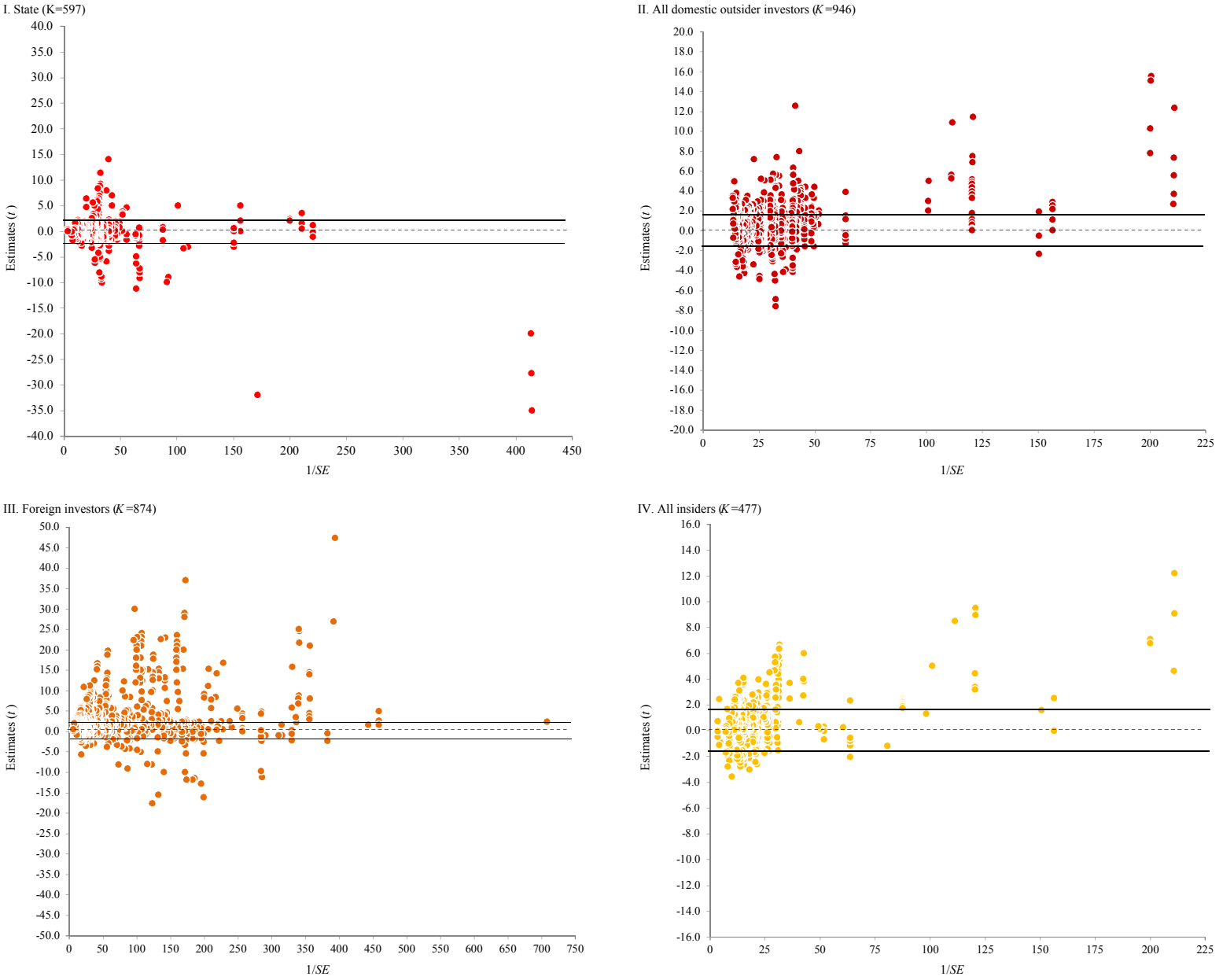
Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.

Figure 8. Funnel plot of estimates by aggregated category of ownership variable



Note: Solid line indicates the mean of the top 10% most-precise estimates. The values for state, all domestic outsider investors, foreign investors, and all insiders are -0.012, 0.027, 0.017, and 0.019, respectively.
Source: Authors' illustration.

Figure 9. Galbraith plot of estimates by aggregated category of ownership variable



Note: Solid lines indicate the thresholds of two-sided critical values at the 5% significance level ±1.96.

Source: Authors' illustration.

Table 13. Meta-regression analysis of publication selection bias by aggregated category of ownership variable

(a) FAT (Type I publication selection bias)-PET test (Equation: $t=\beta_0+\beta_1(1/SE)+v$)

Estimates to test	I. State			II. All domestic outsider investors			III. Foreign investors			IV. All insiders		
Estimator	OLS	Cluster-robust OLS	Cluster-robust fixed-effects panel LSDV	OLS	Cluster-robust OLS	Cluster-robust fixed-effects panel LSDV	OLS	Cluster-robust OLS	Cluster-robust random-effects panel GLS	OLS	Cluster-robust OLS	Cluster-robust random-effects panel GLS
Model	[1]	[2]	[3] [a]	[4]	[5]	[6] [b]	[7]	[8]	[9] [c]	[10]	[11]	[12] [d]
Intercept (FAT: H_0: β_0=0)	1.0997 ***	1.0997	-0.2404	-0.2177	-0.2177	0.9822	1.7987 ***	1.7987 ***	2.2801 ***	0.2914 **	0.2914	0.3130
	(0.315)	(0.669)	(0.346)	(0.139)	(0.316)	(0.907)	(0.245)	(0.587)	(0.441)	(0.124)	(0.395)	(0.318)
$1/SE$ (PET: H_0: β_1=0)	-0.0289 ***	-0.0289	0.0025	0.0298 ***	0.0298 ***	-0.0076	0.0142 ***	0.0142 *	0.0085	0.0296 ***	0.0296 ***	0.0269 ***
	(0.009)	(0.018)	(0.008)	(0.005)	(0.009)	(0.028)	(0.003)	(0.008)	(0.006)	(0.004)	(0.008)	(0.008)
K	597	597	597	946	946	946	874	874	874	477	477	477
R^2	0.1615	0.1615	0.1615	0.1572	0.1572	0.1572	0.0425	0.0425	0.0425	0.1827	0.1827	0.1827

(b) Test of type II publication selection bias (Equation: $|t|=\beta_0+\beta_1(1/SE)+v$)

Estimates to test	I. State			II. All domestic outsider investors			III. Foreign investors			IV. All insiders		
Estimator	OLS	Cluster-robust OLS	Cluster-robust fixed-effects panel LSDV	OLS	Cluster-robust OLS	Cluster-robust random-effects panel GLS	OLS	Cluster-robust OLS	Cluster-robust random-effects panel GLS	OLS	Cluster-robust OLS	Cluster-robust random-effects panel GLS
Model	[13]	[14]	[15] [e]	[16]	[17]	[18] [f]	[19]	[20]	[21] [g]	[22]	[23]	[24] [h]
Intercept (H_0: β_0=0)	0.8153 ***	0.8153	1.3811 ***	0.7554 ***	0.7554 **	0.9493 ***	2.5518 ***	2.5518 ***	2.4931 ***	1.0974 ***	1.0974 ***	1.0854 ***
	(0.290)	(0.612)	(0.287)	(0.128)	(0.287)	(0.236)	(0.232)	(0.493)	(0.399)	(0.105)	(0.240)	(0.260)
$1/SE$	0.0266 ***	0.0266	0.0133 *	0.0249 ***	0.0249 ***	0.0227 ***	0.0176 ***	0.0176 ***	0.0129 **	0.0236 ***	0.0236 ***	0.0242 ***
	(0.008)	(0.018)	(0.007)	(0.005)	(0.009)	(0.008)	(0.003)	(0.006)	(0.005)	(0.004)	(0.007)	(0.008)
K	597	597	597	946	946	946	874	874	874	477	477	477
R^2	0.1911	0.1911	0.1911	0.1815	0.1815	0.1815	0.0820	0.0820	0.0820	0.2058	0.2058	0.2058

(c) PEESE approach (Equation: $t=\beta_0 SE+\beta_1(1/SE)+v$)

Estimates to test	I. State			II. All domestic outsider investors			III. Foreign investors			IV. All insiders		
Estimator	OLS	Cluster-robust OLS	Random-effects panel ML	OLS	Cluster-robust OLS	Random-effects panel ML	OLS	Cluster-robust OLS	Random-effects panel ML	OLS	Cluster-robust OLS	Random-effects panel ML
Model	[25]	[26]	[27]	[28]	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]
SE	10.20091 ***	10.20091	-7.9188	-0.1554	-0.1554	-0.2518	20.8845 ***	20.8845 **	10.2603	2.4375 **	2.4375	0.5854
	(3.35162)	(7.08530)	(6.9759)	(1.375)	(3.323)	(2.979)	(2.676)	(7.978)	(8.868)	(1.195)	(4.708)	(2.718)
$1/SE$ (H_0: β_1=0)	-0.0205 ***	-0.0205	-0.0269 ***	0.0261 ***	0.0261 ***	0.0224 ***	0.0228 ***	0.0228 ***	0.0124 ***	0.0330 ***	0.0330 ***	0.0302 ***
	(0.007)	(0.015)	(0.006)	(0.003)	(0.007)	(0.004)	(0.003)	(0.008)	(0.002)	(0.003)	(0.006)	(0.005)
K	597	597	597	946	946	946	874	874	874	477	477	477
R^2	0.1262	0.1262	-	0.2402	0.2402	-	0.2071	0.2071	-	0.3584	0.3580	-

Notes:

[a] Breusch–Pagan test: χ^2=402.59, p=0.000; Hausman test: χ^2=17.09, p=0.000

[b] Breusch–Pagan test: χ^2=285.06, p=0.000; Hausman test: χ^2=5.89, p=0.015

[c] Breusch–Pagan test: χ^2=4754.29, p=0.000; Hausman test: χ^2=0.75, p=0.387

[d] Breusch–Pagan test: χ^2=835.36, p=0.000; Hausman test: χ^2=0.39, p=0.535

[e] Breusch–Pagan test: χ^2=464.07, p=0.000; Hausman test: χ^2=13.04, p=0.001

[f] Breusch–Pagan test: χ^2=542.97, p=0.000; Hausman test: χ^2=0.27, p=0.606

[g] Breusch–Pagan test: χ^2=1609.92, p=0.000; Hausman test: χ^2=0.02, p=0.889

[h] Breusch–Pagan test: χ^2=424.53, p=0.000; Hausman test: χ^2=0.21, p=0.645

Figures in parentheses beneath the regression coefficients are standard errors. Except for models [27], [30], [33], and [36], robust standard errors are estimated. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation.

Table 14. Summary of publication selection bias test

Ownership variable type[a]	Number of estimates (K)	Test results[b]			
		Funnel asymmetry test for type I PBS (FAT) ($H_0: \beta_0=0$)	Test for type II PBS ($H_0: \beta_0=0$)	Precision-effect test (PET) ($H_0: \beta_1=0$)	Precision-effect estimate with standard error (PEESE) ($H_0: \beta_1=0$)[c]
I. State	597	Not rejected	Rejected	Not rejected	Rejected (-0.0267/-0.0205)
1. Unspecified government	493	Not rejected	Rejected	Not rejected	Not rejected
2. Central government	60	Rejected	Not rejected	Rejected	Rejected (-0.0459/-0.0384)
3. Regional/local government	44	Rejected	Rejected	Rejected	Rejected (-0.0748/-0.0743)
II. All domestic outsider investors	946	Not rejected	Rejected	Rejected	Rejected (0.0224/0.0261)
4. Unspecified domestic outsider investors	109	Rejected	Rejected	Not rejected	Rejected (0.0137/0.0193)
5. Domestic outsider individual investors	168	Not rejected	Rejected	Rejected	Rejected (0.0251/0.0265)
6. Unspecified domestic outsider institutional investors	98	Not rejected	Not rejected	Rejected	Rejected (0.0375/0.0426)
7. Unspecified domestic financial institutions	123	Not rejected	Rejected	Not rejected	Not rejected
8. Domestic banks	95	Not rejected	Rejected	Not rejected	Not rejected
9. Domestic non-bank financial institutions	144	Not rejected	Rejected	Rejected	Rejected (0.0112)
10. Domestic company groups and holdings	77	Not rejected	Not rejected	Rejected	Rejected (0.0537/0.0689)
11. Other domestic non-financial companies	132	Rejected	Rejected	Not rejected	Rejected (0.0222)
III (12). Foreign investors	874	Rejected	Rejected	Rejected	Rejected (0.0124/0.0228)
IV. All insiders	477	Not rejected	Rejected	Rejected	Rejected (0.0302/0.0330)
13. Unspecified insiders	163	Not rejected	Rejected	Rejected	Rejected (0.0340/0.0363)
14. Managers	187	Not rejected	Rejected	Not rejected	Rejected (0.0284/0.0261)
15. Employees	127	Not rejected	Rejected	Not rejected	Not rejected

Notes:

[a] Ownership variable types with Arabic numerals belong to the basic category, while those with Roman numerals belong to the aggregated category.

[b] The null hypothesis is rejected when more than two of three models show a statistically significant estimate. Otherwise not rejected.

[c] Figures in parentheses are PSB-adjusted estimates. If two estimates are reported, the left and right figures denote the minimum and maximum estimate, respectively.

Source: Authors' estimation.

Supplement 1. Meta-regression analysis of the idiosyncrasy of CEE countries: estimation using the basic category of ownership variable

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (Unspecified government)							
Central government	-0.0029	-0.0009	0.0080	0.0033	0.0263	0.0261	0.0264
	(0.023)	(0.023)	(0.023)	(0.043)	(0.023)	(0.023)	(0.025)
Regional/local government	-0.0063	0.0035	-0.0147	0.0347	0.0080	0.0082	0.0046
	(0.016)	(0.021)	(0.025)	(0.042)	(0.016)	(0.016)	(0.019)
Unspecified domestic outsider investors	0.0681 **	0.1218	0.0082	0.0280	0.0451 *	0.0456 *	0.0401 *
	(0.034)	(0.082)	(0.026)	(0.039)	(0.027)	(0.027)	(0.024)
Domestic outsider individual investors	-0.0040	-0.0243	0.0323	-0.0749	-0.0036	-0.0037	-0.0032
	(0.030)	(0.033)	(0.041)	(0.046)	(0.017)	(0.018)	(0.018)
Unspecified domestic outsider institutional investors	0.0149	0.0053	0.0336	0.0399	-0.0158	-0.0158	-0.0165
	(0.021)	(0.026)	(0.027)	(0.041)	(0.020)	(0.020)	(0.020)
Unspecified domestic financial institutions	0.0658 **	0.0591 **	0.0830 **	0.0443	0.0866	0.0858	0.0955
	(0.029)	(0.029)	(0.035)	(0.041)	(0.073)	(0.073)	(0.088)
Domestic banks	0.0586	0.1067 ***	0.0484	0.0611	0.0684	0.0682	0.0701
	(0.054)	(0.036)	(0.047)	(0.041)	(0.088)	(0.088)	(0.092)
Domestic non-bank financial institutions	0.1225 ***	0.1285 ***	0.0368	0.1327 ***	0.0773 ***	0.0773 ***	0.0769 ***
	(0.017)	(0.017)	(0.066)	(0.044)	(0.019)	(0.019)	(0.019)
Domestic company groups and holdings	0.0862 ***	0.0744 **	0.0877 ***	-0.0068	0.0320	0.0339	0.0093
	(0.031)	(0.034)	(0.032)	(0.042)	(0.021)	(0.022)	(0.019)
Other domestic non-financial companies	-0.0060	-0.0008	0.0087	0.0138	-0.0517 ***	-0.0516 ***	-0.0521 ***
	(0.014)	(0.017)	(0.029)	(0.044)	(0.016)	(0.016)	(0.016)
Foreign investors	0.1139 ***	0.1367 ***	0.0916 ***	0.1340 ***	0.0881 ***	0.0885 ***	0.0851 **
	(0.024)	(0.022)	(0.032)	(0.036)	(0.032)	(0.032)	(0.038)
Unspecified insiders	0.0152	-0.0263	-0.0229	0.0079	0.0067	0.0068	0.0049
	(0.035)	(0.037)	(0.027)	(0.039)	(0.028)	(0.029)	(0.030)
Managers	0.0805 **	0.0389	0.0953 ***	0.0502	0.0666 **	0.0666 **	0.0657 **
	(0.038)	(0.030)	(0.027)	(0.034)	(0.026)	(0.027)	(0.026)
Employees	0.0173	-0.0137	0.0149	-0.0033	-0.0066	-0.0065	-0.0076
	(0.026)	(0.032)	(0.027)	(0.054)	(0.017)	(0.018)	(0.017)
Interaction term							
Central government × CEE countries	0.0509 *	0.0706 **	0.0091	0.0475	0.0117	0.0119	0.0104
	(0.029)	(0.032)	(0.025)	(0.047)	(0.027)	(0.027)	(0.029)
Regional/local government × CEE countries	0.0163	0.0282	-0.0062	-0.0170	-0.0080	-0.0082	-0.0057
	(0.024)	(0.032)	(0.027)	(0.046)	(0.022)	(0.022)	(0.024)
Unspecified domestic outsider investors × CEE countries	-0.0556	-0.0998	0.0150	-0.0324	-0.0064	-0.0069	-0.0012
	(0.039)	(0.086)	(0.035)	(0.043)	(0.032)	(0.032)	(0.030)
Domestic outsider individual investors × CEE countries	0.0305	0.0574	-0.0174	0.0870 *	0.0276	0.0277	0.0273
	(0.034)	(0.037)	(0.042)	(0.047)	(0.024)	(0.024)	(0.024)
Unspecified domestic outsider institutional investors × CEE countries	0.0179	0.0469	-0.0099	-0.0290	0.0454 *	0.0453 *	0.0454 *
	(0.027)	(0.029)	(0.030)	(0.040)	(0.023)	(0.024)	(0.024)
Unspecified domestic financial institutions × CEE countries	-0.1008 **	-0.1045 **	-0.1118 **	-0.1419 ***	-0.1033	-0.1025	-0.1115
	(0.047)	(0.044)	(0.048)	(0.052)	(0.079)	(0.079)	(0.092)
Domestic banks × CEE countries	-0.0600	-0.0959 **	-0.0632	-0.0337	-0.0821	-0.0818	-0.0850
	(0.057)	(0.041)	(0.050)	(0.044)	(0.089)	(0.090)	(0.093)
Domestic non-bank financial institutions × CEE countries	-0.1219 ***	-0.1236 ***	-0.0442	-0.1444 ***	-0.0773 ***	-0.0773 ***	-0.0777 ***
	(0.023)	(0.025)	(0.068)	(0.043)	(0.023)	(0.024)	(0.023)
Domestic company groups and holdings × CEE countries	-0.0790 **	-0.0455	-0.1118 ***	0.0222	-0.0349	-0.0368	-0.0133
	(0.037)	(0.041)	(0.038)	(0.050)	(0.025)	(0.026)	(0.023)
Other domestic non-financial companies × CEE countries	0.0355	0.0236	0.0011	-0.0014	0.0887 ***	0.0885 ***	0.0898 ***
	(0.022)	(0.028)	(0.038)	(0.051)	(0.022)	(0.022)	(0.022)
Foreign investors × CEE countries	-0.0699 ***	-0.0850 ***	-0.0633 *	-0.0714 *	-0.0554	-0.0556	-0.0560
	(0.026)	(0.023)	(0.034)	(0.037)	(0.034)	(0.034)	(0.040)
Unspecified insiders × CEE countries	0.0235	0.0583	0.0499 *	-0.0037	0.0160	0.0161	0.0166
	(0.037)	(0.041)	(0.029)	(0.041)	(0.031)	(0.031)	(0.033)
Managers × CEE countries	-0.0703 *	-0.0148	-0.0699 *	-0.0373	-0.0710 **	-0.0708 **	-0.0721 **
	(0.042)	(0.036)	(0.040)	(0.037)	(0.030)	(0.030)	(0.030)
Employees × CEE countries	-0.0669	0.0131	-0.0344	-0.0693	-0.0447	-0.0446	-0.0448
	(0.044)	(0.040)	(0.036)	(0.084)	(0.046)	(0.046)	(0.047)
CEE countries	0.0308 **	0.0258 *	0.0473 *	0.0371	0.0433 **	0.0425 **	0.0655
	(0.015)	(0.015)	(0.026)	(0.036)	(0.021)	(0.021)	(0.044)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.208	0.292	0.392	0.543	-	0.079	0.022

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13][c]	[14][d]
Ownership variable type (Unspecified government)							
Central government	-1.9158	-2.2750	-9.3861**	-5.4252	1.6280*	1.4862	2.0716*
	(1.489)	(1.546)	(4.286)	(3.802)	(0.980)	(0.963)	(1.154)
Regional/local government	-3.1043	-3.3578	-21.2391***	-12.2145	-0.4691	-0.5995	-0.0522
	(3.161)	(3.378)	(4.225)	(9.427)	(1.049)	(1.184)	(0.674)
Unspecified domestic outsider investors	0.5952	0.6215	-9.0838**	-2.8352	0.9981***	0.9804***	1.0560***
	(0.764)	(0.890)	(4.022)	(2.363)	(0.381)	(0.381)	(0.403)
Domestic outsider individual investors	0.6008	0.5879	4.6538	-1.3302	0.3107	0.2913	0.3868
	(0.610)	(0.929)	(3.390)	(1.769)	(0.477)	(0.485)	(0.477)
Unspecified domestic outsider institutional investors	0.6297	0.1788	0.5151	2.0759	0.0924	0.0915	0.1056
	(0.543)	(0.558)	(2.727)	(2.036)	(0.398)	(0.399)	(0.408)
Unspecified domestic financial institutions	1.2679	0.5153	8.7910*	-0.6283	1.1385*	1.1487*	1.0569
	(0.929)	(0.698)	(4.525)	(2.211)	(0.679)	(0.689)	(0.673)
Domestic banks	0.7563	1.6960**	-0.9064	-1.5547	1.0179	0.9984	1.0882
	(0.882)	(0.704)	(2.791)	(1.774)	(0.982)	(0.986)	(1.009)
Domestic non-bank financial institutions	1.5240**	1.5955***	-4.1444	-0.6615	1.3782***	1.3617***	1.4441***
	(0.714)	(0.575)	(3.859)	(2.066)	(0.464)	(0.469)	(0.470)
Domestic company groups and holdings	2.2500**	2.2038*	1.1961	-0.9122	1.5445***	1.5922***	1.4049**
	(0.970)	(1.214)	(4.106)	(1.689)	(0.562)	(0.570)	(0.610)
Other domestic non-financial companies	-0.0110	0.0568	-1.8840	-2.1372	-0.1438	-0.1600	-0.0787
	(0.631)	(0.658)	(3.797)	(2.047)	(0.417)	(0.418)	(0.436)
Foreign investors	5.0663***	5.3142**	11.2932***	6.0213***	2.2720***	2.3157***	2.1967***
	(1.846)	(2.141)	(3.797)	(2.262)	(0.632)	(0.639)	(0.672)
Unspecified insiders	-0.2802	-0.5893	-11.5554***	-2.3259	0.4920	0.4690	0.5531
	(1.098)	(0.782)	(3.802)	(2.127)	(0.547)	(0.564)	(0.525)
Managers	1.6402***	1.2507**	6.5476*	1.0069	1.6444***	1.6312***	1.6942***
	(0.572)	(0.522)	(3.425)	(1.595)	(0.485)	(0.484)	(0.510)
Employees	0.5064	0.0755	-0.2251	-1.7054	0.3658	0.3548	0.4101
	(0.516)	(0.465)	(2.633)	(1.812)	(0.378)	(0.378)	(0.396)
Interaction term							
Central government × CEE countries	2.6380	3.8104**	6.2526	5.6069	-0.5064	-0.3640	-0.9622
	(1.608)	(1.881)	(4.987)	(4.062)	(1.080)	(1.066)	(1.242)
Regional/local government × CEE countries	2.8291	3.8957	17.1056***	11.5113	0.5932	0.7241	0.1641
	(3.247)	(3.567)	(4.876)	(9.554)	(1.152)	(1.277)	(0.827)
Unspecified domestic outsider investors × CEE countries	-0.7180	-0.6291	8.8061*	-0.8609	0.0125	0.0185	-0.0117
	(0.980)	(1.101)	(5.274)	(2.592)	(0.552)	(0.552)	(0.578)
Domestic outsider individual investors × CEE countries	0.3976	0.1749	-2.7987	2.1201	0.6252	0.6451	0.5440
	(0.851)	(1.022)	(3.985)	(1.875)	(0.679)	(0.687)	(0.687)
Unspecified domestic outsider institutional investors × CEE countries	0.5199	2.0771*	3.1726	-2.0138	1.3230	1.3229	1.3085
	(1.119)	(1.153)	(4.086)	(2.441)	(0.836)	(0.845)	(0.845)
Unspecified domestic financial institutions × CEE countries	-1.3007	-1.0344	-6.9537	-0.6359	-1.2967	-1.3058	-1.2229
	(1.221)	(1.017)	(5.168)	(2.516)	(0.987)	(0.999)	(0.988)
Domestic banks × CEE countries	-1.3414	-2.0251*	-2.3014	2.8457	-1.2958	-1.2770	-1.3738
	(1.067)	(1.026)	(3.767)	(2.003)	(1.122)	(1.128)	(1.150)
Domestic non-bank financial institutions × CEE countries	-2.2121***	-2.2840***	3.2395	-0.6651	-1.2960**	-1.2809**	-1.3684**
	(0.763)	(0.850)	(4.848)	(2.078)	(0.643)	(0.650)	(0.646)
Domestic company groups and holdings × CEE countries	-2.6057**	-1.7461	-5.4155	0.1769	-1.5010**	-1.5480**	-1.3736*
	(1.146)	(1.513)	(5.564)	(2.520)	(0.706)	(0.717)	(0.744)
Other domestic non-financial companies × CEE countries	0.5673	0.1424	0.1049	3.6165	1.2562**	1.2671**	1.1988*
	(0.826)	(0.944)	(5.411)	(2.329)	(0.628)	(0.633)	(0.642)
Foreign investors × CEE countries	-3.0946	-3.8482*	-7.0437*	-2.6797	-0.9431	-0.9634	-0.9580
	(2.028)	(2.227)	(4.100)	(2.541)	(0.830)	(0.845)	(0.848)
Unspecified insiders × CEE countries	1.9947	1.9324*	14.9383***	1.9237	0.7300	0.7601	0.6473
	(1.220)	(1.037)	(4.267)	(2.269)	(0.765)	(0.780)	(0.758)
Managers × CEE countries	-1.5075*	-0.8693	-4.8652	0.0517	-1.3298**	-1.3333**	-1.3150**
	(0.795)	(0.671)	(4.579)	(1.727)	(0.588)	(0.589)	(0.616)
Employees × CEE countries	-1.4374*	-1.1351	-1.7093	-1.3904	-0.7004	-0.6967	-0.7240
	(0.779)	(0.931)	(3.582)	(2.312)	(0.845)	(0.847)	(0.875)
CEE countries	0.7742	0.7285	0.6583	1.6787	1.5466	1.4291	2.2654
	(0.806)	(0.652)	(3.060)	(1.899)	(1.079)	(1.012)	(1.928)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.240	0.318	0.633	0.412	-	0.085	0.034

Notes:

[a] Breusch–Pagan test: χ^2=865.04, p=0.000

[b] Hausman test: χ^2=205.88, p=0.000

[c] Breusch–Pagan test: χ^2=1185.87, p=0.000

[d] Hausman test: χ^2=5.47, p=1.000

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.

Supplement 2. Meta-regression analysis of the idiosyncrasy of voucher privatization countries: estimation using the basic category of ownership variable

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (Unspecified government)							
Central government	0.0085	0.0102	-0.0068	-0.0046	0.0343 **	0.0340 **	0.0352 **
	(0.024)	(0.031)	(0.016)	(0.036)	(0.016)	(0.016)	(0.016)
Regional/local government	0.0006	0.0093	-0.0286	0.0236	0.0079	0.0080	0.0067
	(0.013)	(0.019)	(0.017)	(0.033)	(0.013)	(0.013)	(0.014)
Unspecified domestic outsider investors	0.0284	0.0399	0.0220	0.0149	0.0285	0.0290	0.0255
	(0.021)	(0.027)	(0.023)	(0.033)	(0.023)	(0.023)	(0.026)
Domestic outsider individual investors	0.0458 *	0.0739 **	0.0174 *	0.0245	0.0298	0.0302	0.0258
	(0.024)	(0.030)	(0.010)	(0.026)	(0.021)	(0.021)	(0.022)
Unspecified domestic outsider institutional investors	0.0666 ***	0.0786 ***	0.0320 ***	0.0312	0.0561 ***	0.0564 ***	0.0540 ***
	(0.021)	(0.021)	(0.012)	(0.024)	(0.016)	(0.016)	(0.016)
Unspecified domestic financial institutions	0.0681 **	0.0397 **	0.0529 *	-0.0068	0.0725 **	0.0725 **	0.0706 **
	(0.028)	(0.019)	(0.030)	(0.043)	(0.029)	(0.029)	(0.029)
Domestic banks	-0.0240	-0.0633	-0.0297	-0.2182 **	0.0297	0.0285	0.0352
	(0.072)	(0.069)	(0.070)	(0.085)	(0.057)	(0.057)	(0.061)
Domestic non-bank financial institutions	0.0444 *	0.0425 *	0.0131	0.0423	0.0280	0.0282	0.0267
	(0.026)	(0.024)	(0.014)	(0.050)	(0.020)	(0.021)	(0.020)
Domestic company groups and holdings	0.0410	0.0544 *	0.0333	-0.0214	0.0085	0.0092	0.0043
	(0.027)	(0.029)	(0.030)	(0.034)	(0.014)	(0.015)	(0.014)
Other domestic non-financial companies	0.0225	0.0425	-0.0182	0.0539	0.0584 **	0.0572 **	0.0648 **
	(0.031)	(0.031)	(0.021)	(0.038)	(0.028)	(0.028)	(0.032)
Foreign investors	0.0573 ***	0.0677 ***	0.0255 *	0.0863 ***	0.0246	0.0260	0.0133
	(0.018)	(0.019)	(0.014)	(0.030)	(0.018)	(0.018)	(0.019)
Unspecified insiders	0.0542 ***	0.0595 ***	0.0267 ***	0.0216	0.0467 ***	0.0467 ***	0.0461 ***
	(0.012)	(0.012)	(0.009)	(0.020)	(0.011)	(0.011)	(0.011)
Managers	0.0184	0.0394	0.0202	-0.0042	0.0087	0.0093	0.0044
	(0.021)	(0.026)	(0.027)	(0.028)	(0.020)	(0.020)	(0.021)
Employees	-0.0388	0.0188	-0.0229	-0.0557	-0.0416	-0.0411	-0.0465
	(0.041)	(0.031)	(0.028)	(0.063)	(0.044)	(0.044)	(0.045)
Interaction term							
Central government × Voucher privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Regional/local government × Voucher privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Unspecified domestic outsider investors × Voucher privatization countries	0.0158	0.0276	-0.0320	-0.0033	0.0148	0.0147	0.0155
	(0.041)	(0.080)	(0.030)	(0.046)	(0.036)	(0.037)	(0.036)
Domestic outsider individual investors × Voucher privatization countries	-0.0407	-0.0712 *	0.0114	-0.0634 *	-0.0211	-0.0218	-0.0153
	(0.033)	(0.040)	(0.021)	(0.038)	(0.030)	(0.031)	(0.031)
Unspecified domestic outsider institutional investors × Voucher privatization countries	-0.0587 **	-0.0742 ***	-0.0492 **	-0.0293	-0.0581 **	-0.0585 **	-0.0557 **
	(0.028)	(0.028)	(0.023)	(0.032)	(0.024)	(0.024)	(0.024)
Unspecified domestic financial institutions × Voucher privatization countries	-0.1376 ***	-0.1051 ***	-0.0855 **	-0.1069 *	-0.1229 ***	-0.1232 ***	-0.1199 ***
	(0.045)	(0.040)	(0.040)	(0.056)	(0.043)	(0.043)	(0.043)
Domestic banks × Voucher privatization countries	0.0360	0.0955	0.0327	0.2582 ***	-0.0246	-0.0234	-0.0303
	(0.078)	(0.079)	(0.074)	(0.086)	(0.071)	(0.071)	(0.075)
Domestic non-bank financial institutions × Voucher privatization countries	-0.0325	-0.0360	-0.0281	-0.0474	-0.0184	-0.0186	-0.0174
	(0.032)	(0.034)	(0.023)	(0.057)	(0.028)	(0.029)	(0.028)
Domestic company groups and holdings × Voucher privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Other domestic non-financial companies × Voucher privatization countries	0.0086	-0.0191	0.0478	-0.0455	-0.0289	-0.0277	-0.0350
	(0.037)	(0.042)	(0.029)	(0.042)	(0.037)	(0.037)	(0.040)
Foreign investors × Voucher privatization countries	0.0092	0.0062	0.0367 *	-0.0104	0.0420 *	0.0405	0.0554 **
	(0.022)	(0.024)	(0.021)	(0.036)	(0.026)	(0.026)	(0.028)
Unspecified insiders × Voucher privatization countries	-0.0425	-0.0735 ***	-0.0393	-0.0189	-0.0497 *	-0.0494 *	-0.0517 *
	(0.027)	(0.026)	(0.030)	(0.030)	(0.028)	(0.028)	(0.029)
Managers × Voucher privatization countries	0.0452	-0.0185	0.0543	0.0382	0.0457	0.0449	0.0513
	(0.046)	(0.040)	(0.037)	(0.036)	(0.037)	(0.038)	(0.037)
Employees × Voucher privatization countries	0.0351	-0.0539	0.0139	0.0310	0.0262	0.0255	0.0324
	(0.049)	(0.044)	(0.034)	(0.076)	(0.050)	(0.050)	(0.050)
Voucher privatization countries	-0.0042	0.0112	-0.0265	0.0051	-0.0393 *	-0.0366	-0.0742 **
	(0.018)	(0.019)	(0.019)	(0.037)	(0.023)	(0.023)	(0.029)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.203	0.273	0.394	0.538	-	0.083	0.026

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13][c]	[14][d]
Ownership variable type (Unspecified government)							
Central government	-1.0093	-1.3090	-8.8878 **	-5.1054 *	1.4023 **	1.3360 **	1.5910 **
	(1.182)	(1.495)	(3.684)	(3.025)	(0.625)	(0.612)	(0.713)
Regional/local government	-1.6202	-1.6713	-20.2131 ***	-11.1987	-0.2131	-0.2672	-0.0548
	(1.581)	(1.900)	(4.065)	(8.099)	(0.562)	(0.609)	(0.459)
Unspecified domestic outsider investors	0.2439	0.6847	-1.5329	-2.7515	1.3911 *	1.3775 *	1.4176 *
	(0.911)	(0.939)	(2.568)	(2.100)	(0.750)	(0.752)	(0.778)
Domestic outsider individual investors	1.7490 *	2.0549	2.5532	2.0598	1.2835	1.3066	1.1915
	(0.978)	(1.262)	(1.615)	(1.961)	(0.891)	(0.898)	(0.907)
Unspecified domestic outsider institutional investors	4.2232 ***	4.8142 ***	4.8020 *	3.1506	3.8350 ***	3.8443 ***	3.8034 ***
	(1.520)	(1.030)	(2.560)	(2.004)	(1.201)	(1.212)	(1.214)
Unspecified domestic financial institutions	2.8747 ***	2.1644 ***	8.2684 **	3.3563	2.2124 ***	2.2230 ***	2.1633 ***
	(0.753)	(0.613)	(3.293)	(2.400)	(0.513)	(0.517)	(0.525)
Domestic banks	0.0894	-1.9534	8.5053	-5.0752	1.3886	1.3596	1.4679
	(2.085)	(2.168)	(5.197)	(4.370)	(1.280)	(1.295)	(1.275)
Domestic non-bank financial institutions	1.2500	0.7774	2.6875	3.8338	0.6789	0.6905	0.6403
	(0.963)	(0.974)	(2.268)	(3.246)	(0.856)	(0.862)	(0.876)
Domestic company groups and holdings	0.7842	1.6997	-0.4660	-2.1018	0.2970	0.3005	0.2953
	(0.927)	(1.125)	(2.817)	(1.320)	(0.485)	(0.496)	(0.479)
Other domestic non-financial companies	0.6279	0.6060	-1.6451	3.3749	2.0856 ***	2.0637 ***	2.1218 ***
	(1.115)	(1.012)	(2.962)	(2.360)	(0.762)	(0.765)	(0.786)
Foreign investors	2.7826 **	2.1632 ***	3.7073 *	6.2530 **	1.5524 *	1.5992 *	1.3698
	(1.100)	(0.750)	(2.232)	(2.535)	(0.915)	(0.923)	(0.936)
Unspecified insiders	2.5773 ***	2.5870 ***	3.6030 **	2.0335	2.4028 ***	2.4058 ***	2.3849 ***
	(0.496)	(0.547)	(1.523)	(1.527)	(0.541)	(0.543)	(0.557)
Managers	0.4696	0.8133	1.3922	1.3490	0.9491	0.9322	0.9884
	(0.743)	(0.661)	(3.341)	(2.034)	(0.675)	(0.677)	(0.698)
Employees	-0.5982	-0.7382	-3.5273	-1.6096	0.1231	0.1242	0.0895
	(0.753)	(1.187)	(3.560)	(2.182)	(0.922)	(0.924)	(0.947)
Interaction term							
Central government × Voucher privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Regional/local government × Voucher privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Unspecified domestic outsider investors × Voucher privatization countries	-0.1038	-0.9324	-6.3098	-0.7944	-0.5993	-0.5918	-0.6106
	(1.168)	(1.233)	(4.728)	(3.165)	(0.856)	(0.859)	(0.886)
Domestic outsider individual investors × Voucher privatization countries	-1.2476	-1.7425	-0.6406	-2.3625	-0.7214	-0.7582	-0.5808
	(1.136)	(1.403)	(2.573)	(2.128)	(1.078)	(1.087)	(1.094)
Unspecified domestic outsider institutional investors × Voucher privatization countries	-4.6056 ***	-5.0955 ***	-10.2706 ***	-3.6006	-3.9333 ***	-3.9473 ***	-3.8907 ***
	(1.588)	(1.132)	(3.364)	(2.335)	(1.280)	(1.292)	(1.296)
Unspecified domestic financial institutions × Voucher privatization countries	-4.0708 ***	-3.4295 ***	-6.9411 *	-6.0062 **	-3.3870 ***	-3.4000 ***	-3.3283 ***
	(1.086)	(1.019)	(3.638)	(2.622)	(0.956)	(0.964)	(0.970)
Domestic banks × Voucher privatization countries	-0.5543	2.0278	-11.9575 *	6.0654	-1.5019	-1.4837	-1.5477
	(2.412)	(2.659)	(6.115)	(4.493)	(1.559)	(1.577)	(1.560)
Domestic non-bank financial institutions × Voucher privatization countries	-1.9099	-1.5806	-8.4167 **	-5.2991	-0.5226	-0.5453	-0.4529
	(1.222)	(1.483)	(3.415)	(3.466)	(1.040)	(1.048)	(1.058)
Domestic company groups and holdings × Voucher privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Other domestic non-financial companies × Voucher privatization countries	-0.1052	-0.3327	0.5610	-2.3650	-1.2273	-1.2169	-1.2292
	(1.374)	(1.423)	(4.036)	(2.432)	(1.026)	(1.035)	(1.041)
Foreign investors × Voucher privatization countries	-0.2517	0.1564	4.0738	-3.4779	0.1645	0.1304	0.3369
	(1.387)	(1.073)	(3.057)	(2.592)	(1.029)	(1.038)	(1.055)
Unspecified insiders × Voucher privatization countries	-2.8397 ***	-3.2918 ***	-11.3852 **	-4.6201 **	-2.3698 ***	-2.3740 ***	-2.3541 ***
	(0.910)	(0.795)	(4.423)	(1.987)	(0.748)	(0.753)	(0.762)
Managers × Voucher privatization countries	0.4774	-0.3422	4.2470	-0.5078	0.3379	0.3388	0.3559
	(0.906)	(0.748)	(5.353)	(2.227)	(0.792)	(0.795)	(0.819)
Employees × Voucher privatization countries	0.3903	-0.1509	2.2166	-1.0228	0.0097	-0.0047	0.0927
	(0.916)	(1.215)	(4.198)	(2.662)	(1.023)	(1.026)	(1.053)
Voucher privatization countries	-0.4272	-0.0092	-1.6186	1.2948	-1.9556 *	-1.7822 *	-2.7927 *
	(0.880)	(0.752)	(3.011)	(2.326)	(1.073)	(1.038)	(1.443)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.238	0.306	0.626	0.417	-	0.110	0.048

Notes:

[a] Breusch–Pagan test: χ^2 ==923.78, p =0.000

[b] Hausman test: χ^2 =110.53, p =0.000

[c] Breusch–Pagan test: χ^2 =1226.03, p =0.000

[d] Hausman test: χ^2 =115.30, p =0.000

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.

Supplement 3. Meta-regression analysis of the idiosyncrasy of MEBO privatization countries: estimation using the basic category of ownership variable

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (Unspecified government)							
Central government	0.0136	0.0179	-0.0233	-0.0033	0.0371 **	0.0370 **	0.0373 **
	(0.023)	(0.030)	(0.020)	(0.034)	(0.015)	(0.016)	(0.016)
Regional/local government	0.0057	0.0165	-0.0456 **	0.0243	0.0108	0.0109	0.0089
	(0.012)	(0.018)	(0.020)	(0.031)	(0.011)	(0.011)	(0.011)
Unspecified domestic outsider investors	0.0473 **	0.0607 *	-0.0093	0.0126	0.0495 ***	0.0496 ***	0.0467 ***
	(0.022)	(0.033)	(0.020)	(0.024)	(0.019)	(0.019)	(0.018)
Domestic outsider individual investors	0.0176	0.0188	0.0198	-0.0197	0.0169	0.0169	0.0173
	(0.018)	(0.019)	(0.016)	(0.023)	(0.018)	(0.018)	(0.018)
Unspecified domestic outsider institutional investors	0.0201	0.0158	-0.0091	0.0057	0.0083	0.0083	0.0077
	(0.017)	(0.018)	(0.018)	(0.021)	(0.016)	(0.016)	(0.016)
Unspecified domestic financial institutions	-0.0494 *	-0.0449	-0.0346	-0.1004 ***	-0.0349	-0.0350	-0.0341
	(0.029)	(0.027)	(0.028)	(0.026)	(0.026)	(0.026)	(0.026)
Domestic banks	0.0153	0.0276	-0.0115	0.0377 *	0.0078	0.0079	0.0069
	(0.021)	(0.023)	(0.019)	(0.019)	(0.026)	(0.026)	(0.027)
Domestic non-bank financial institutions	0.0214	0.0134	-0.0049	0.0043	0.0145	0.0146	0.0133
	(0.015)	(0.020)	(0.015)	(0.024)	(0.016)	(0.016)	(0.016)
Domestic company groups and holdings	0.0459 *	0.0585 **	0.0167	-0.0199	0.0099	0.0104	0.0051
	(0.026)	(0.029)	(0.026)	(0.034)	(0.012)	(0.012)	(0.011)
Other domestic non-financial companies	0.0366 **	0.0295	0.0150	0.0139	0.0343 **	0.0343 **	0.0340 *
	(0.014)	(0.019)	(0.018)	(0.015)	(0.017)	(0.017)	(0.017)
Foreign investors	0.0681 ***	0.0727 ***	0.0356 **	0.0804 ***	0.0612 ***	0.0613 ***	0.0607 ***
	(0.013)	(0.014)	(0.016)	(0.020)	(0.013)	(0.013)	(0.014)
Unspecified insiders	0.0212	0.0070	0.0014	0.0004	0.0074	0.0076	0.0053
	(0.020)	(0.018)	(0.022)	(0.020)	(0.019)	(0.019)	(0.020)
Managers	0.0557 *	0.0248	0.0493 **	0.0332	0.0499 *	0.0498 *	0.0499 *
	(0.031)	(0.020)	(0.024)	(0.020)	(0.028)	(0.028)	(0.028)
Employees	0.0040	-0.0018	0.0047	-0.0128	-0.0048	-0.0048	-0.0053
	(0.020)	(0.022)	(0.024)	(0.037)	(0.019)	(0.019)	(0.019)
Interaction term							
Central government × MEBO privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Regional/local government × MEBO privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Unspecified domestic outsider investors × MEBO privatization countries	-0.1809	-0.1821	-0.0657	0.0518	-0.1720 **	-0.1746 **	-0.1296
	(0.118)	(0.129)	(0.099)	(0.166)	(0.083)	(0.084)	(0.083)
Domestic outsider individual investors × MEBO privatization countries	-0.0101	0.0064	-0.0044	0.0233	-0.0163	-0.0162	-0.0153
	(0.033)	(0.044)	(0.018)	(0.034)	(0.029)	(0.029)	(0.031)
Unspecified domestic outsider institutional investors × MEBO privatization countries	0.0127	0.0209	0.0497 **	0.0186	0.0176	0.0175	0.0205
	(0.026)	(0.036)	(0.020)	(0.029)	(0.022)	(0.022)	(0.024)
Unspecified domestic financial institutions × MEBO privatization countries	0.1327 ***	0.1171 ***	0.1384 ***	0.1528 ***	0.1231 ***	0.1235 ***	0.1177 **
	(0.042)	(0.042)	(0.044)	(0.051)	(0.046)	(0.047)	(0.048)
Domestic banks × MEBO privatization countries	0.4714 ***	0.3097 *	0.5415 ***	-0.1096	0.5637 ***	0.5608 ***	0.6025 ***
	(0.145)	(0.168)	(0.176)	(0.202)	(0.161)	(0.163)	(0.168)
Domestic non-bank financial institutions × MEBO privatization countries	-0.0334	-0.0083	0.0044	-0.0455	-0.0259	-0.0262	-0.0179
	(0.026)	(0.037)	(0.020)	(0.044)	(0.024)	(0.024)	(0.026)
Domestic company groups and holdings × MEBO privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Other domestic non-financial companies × MEBO privatization countries	-0.0265	0.1467	-0.0822	-0.0651	0.0720	0.0703	0.0946
	(0.134)	(0.148)	(0.087)	(0.223)	(0.124)	(0.124)	(0.133)
Foreign investors × MEBO privatization countries	-0.0482	-0.0468	-0.0114	-0.0012	-0.0863 ***	-0.0853 ***	-0.1078 ***
	(0.030)	(0.038)	(0.018)	(0.042)	(0.026)	(0.026)	(0.025)
Unspecified insiders × MEBO privatization countries	0.0235	0.0468 *	0.0298	0.0210	0.0279	0.0277	0.0324
	(0.025)	(0.027)	(0.024)	(0.029)	(0.025)	(0.026)	(0.027)
Managers × MEBO privatization countries	-0.0604	-0.0056	-0.0277	-0.0475	-0.0670 **	-0.0664 **	-0.0733 **
	(0.042)	(0.049)	(0.029)	(0.039)	(0.032)	(0.033)	(0.033)
Employees × MEBO privatization countries	-0.1571 ***	-0.1119 **	-0.0537	-0.1905 ***	-0.1363 ***	-0.1362 ***	-0.1388 ***
	(0.033)	(0.053)	(0.039)	(0.058)	(0.034)	(0.035)	(0.032)
MEBO privatization countries	0.0367 *	0.0323	-0.0001	0.0009	0.0916 ***	0.0896 ***	0.1355 ***
	(0.020)	(0.029)	(0.015)	(0.039)	(0.026)	(0.026)	(0.033)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.208	0.269	0.385	0.537	-	0.079	0.022

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13][c]	[14][d]
Ownership variable type (Unspecified government)							
Central government	-0.8368	-1.0708	-10.1251***	-5.1283	1.6159***	1.5356***	1.7868**
	(1.157)	(1.470)	(3.660)	(3.140)	(0.617)	(0.597)	(0.711)
Regional/local government	-1.4837	-1.4641	-21.4783***	-11.2938	0.0140	-0.0511	0.1542
	(1.590)	(1.915)	(4.075)	(8.314)	(0.539)	(0.599)	(0.435)
Unspecified domestic outsider investors	0.3240	0.2107	-7.1423**	-3.3339**	1.1283***	1.1244***	1.1274***
	(0.427)	(0.518)	(2.852)	(1.563)	(0.363)	(0.363)	(0.376)
Domestic outsider individual investors	0.7632	0.5801	1.9660	0.7977	0.8335	0.8268	0.8459
	(0.528)	(0.602)	(2.084)	(1.118)	(0.521)	(0.526)	(0.525)
Unspecified domestic outsider institutional investors	0.0680	0.0756	-3.2662	0.1302	0.3047	0.3022	0.3034
	(0.479)	(0.514)	(2.719)	(1.572)	(0.357)	(0.359)	(0.365)
Unspecified domestic financial institutions	-0.4414	-0.5933	1.3191	-1.4297	-0.5474	-0.5468	-0.5514
	(0.804)	(0.687)	(2.433)	(1.265)	(0.698)	(0.703)	(0.706)
Domestic banks	-0.2828	-0.0037	-4.3107*	1.3462*	0.0954	0.0854	0.1128
	(0.555)	(0.684)	(2.514)	(0.726)	(0.560)	(0.563)	(0.569)
Domestic non-bank financial institutions	-0.2327	-0.5102	-2.1232	-0.7384	0.4044	0.3961	0.4166
	(0.531)	(0.786)	(2.335)	(1.104)	(0.467)	(0.470)	(0.474)
Domestic company groups and holdings	0.9671	1.7768	-1.8979	-1.6809	0.4653	0.4705	0.4614
	(0.845)	(1.087)	(2.415)	(1.238)	(0.441)	(0.450)	(0.443)
Other domestic non-financial companies	0.7062	0.4237	-2.0270	1.4786*	1.0838**	1.0723**	1.1044**
	(0.523)	(0.651)	(2.751)	(0.771)	(0.486)	(0.490)	(0.491)
Foreign investors	2.9321***	2.3905***	4.7771**	3.9576***	1.8937***	1.9202***	1.8414***
	(0.716)	(0.563)	(2.238)	(1.161)	(0.468)	(0.473)	(0.478)
Unspecified insiders	0.4084	0.2795	-2.3808	-1.8815	0.5348	0.5382	0.5152
	(0.603)	(0.590)	(3.266)	(1.256)	(0.445)	(0.451)	(0.446)
Managers	0.8251	0.4066	1.4730	1.1023	1.3151***	1.3030***	1.3396***
	(0.541)	(0.519)	(3.244)	(0.767)	(0.492)	(0.495)	(0.500)
Employees	-0.1189	-0.4122	-2.9849	-2.6341**	0.4394	0.4326	0.4490
	(0.425)	(0.439)	(2.151)	(1.298)	(0.411)	(0.413)	(0.419)
Interaction term							
Central government × MEBO privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Regional/local government × MEBO privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Unspecified domestic outsider investors × MEBO privatization countries	-3.0417	-1.4787	14.7049	7.1609	-1.8359	-2.0141	-1.3929
	(3.885)	(2.605)	(12.463)	(8.720)	(2.406)	(2.355)	(2.660)
Domestic outsider individual investors × MEBO privatization countries	0.2225	0.9064	1.0806	-0.3392	-0.0969	-0.0941	-0.1011
	(1.719)	(1.833)	(2.610)	(2.367)	(1.618)	(1.631)	(1.641)
Unspecified domestic outsider institutional investors × MEBO privatization countries	4.4023**	3.9558**	10.5256***	2.5436	3.8173**	3.8099*	3.8420*
	(1.965)	(1.539)	(3.284)	(2.739)	(1.935)	(1.954)	(1.955)
Unspecified domestic financial institutions × MEBO privatization countries	2.6783**	3.3383**	11.9496***	6.0717**	2.3437***	2.3540***	2.3151**
	(1.078)	(1.385)	(4.138)	(2.383)	(0.912)	(0.915)	(0.934)
Domestic banks × MEBO privatization countries	15.1698**	9.1566	56.3812***	1.0808	15.0706***	15.0544***	15.1447***
	(7.022)	(6.211)	(20.500)	(11.700)	(2.828)	(2.917)	(2.728)
Domestic non-bank financial institutions × MEBO privatization countries	-0.7908	0.0355	3.5681	-0.3560	-0.9862	-1.0161	-0.9108
	(1.542)	(1.906)	(2.859)	(2.288)	(1.499)	(1.501)	(1.542)
Domestic company groups and holdings × MEBO privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Other domestic non-financial companies × MEBO privatization countries	-0.2634	3.9807	-3.0317	-2.9167	4.5230**	4.4797**	4.6420**
	(4.616)	(5.099)	(13.308)	(11.636)	(2.133)	(2.172)	(2.108)
Foreign investors × MEBO privatization countries	-1.8336	-1.8044	-1.1929	0.8577	-1.9214*	-1.8412*	-2.1989**
	(1.305)	(1.447)	(2.524)	(2.337)	(1.061)	(1.078)	(1.060)
Unspecified insiders × MEBO privatization countries	1.7359*	2.4315**	7.6238**	3.6294*	1.8730*	1.8414*	1.9651*
	(1.039)	(1.185)	(3.631)	(2.177)	(1.115)	(1.118)	(1.152)
Managers × MEBO privatization countries	-1.0126	0.2026	8.0707*	0.7492	-1.0641	-1.1082	-0.9252
	(0.799)	(0.971)	(4.857)	(1.727)	(0.780)	(0.776)	(0.825)
Employees × MEBO privatization countries	-2.0906*	-4.3326*	0.2156	3.9121	-2.4360***	-2.4408***	-2.4325***
	(1.116)	(2.591)	(4.424)	(3.060)	(0.621)	(0.624)	(0.621)
MEBO privatization countries	1.8952**	1.4726	-2.4584	-0.8401	4.2445***	3.9842***	5.0735***
	(0.884)	(1.168)	(2.364)	(1.925)	(1.318)	(1.280)	(1.529)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.237	0.307	0.621	0.408	-	0.104	0.028

Notes:

[a] Breusch–Pagan test: χ^2=1006.82, p=0.000

[b] Hausman test: χ^2=48.53, p=0.611

[c] Breusch–Pagan test: χ^2=1339.67, p=0.000

[d] Hausman test: χ^2=574.11, p=0.000

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.

Supplement 4. Meta-regression analysis of the idiosyncrasy of direct-sale privatization countries: estimation using the basic category of ownership variable

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (Unspecified government)							
Central government	0.0020	0.0063	-0.0173	-0.0058	0.0260	0.0258	0.0272
	(0.025)	(0.031)	(0.017)	(0.034)	(0.017)	(0.017)	(0.018)
Regional/local government	-0.0060	0.0050	-0.0388 **	0.0228	-0.0005	-0.0004	-0.0021
	(0.014)	(0.020)	(0.016)	(0.031)	(0.012)	(0.012)	(0.013)
Unspecified domestic outsider investors	0.0377	0.0659	-0.0184	0.0111	0.0343	0.0345	0.0316
	(0.029)	(0.061)	(0.013)	(0.027)	(0.024)	(0.025)	(0.023)
Domestic outsider individual investors	0.0039	0.0032	0.0202 **	-0.0261	0.0020	0.0019	0.0021
	(0.020)	(0.022)	(0.009)	(0.021)	(0.020)	(0.021)	(0.021)
Unspecified domestic outsider institutional investors	0.0118	0.0112	0.0356 ***	0.0074	-0.0047	-0.0046	-0.0058
	(0.017)	(0.018)	(0.011)	(0.020)	(0.016)	(0.016)	(0.016)
Unspecified domestic financial institutions	-0.0335	-0.0513 *	-0.0231	-0.0963 ***	-0.0153	-0.0154	-0.0147
	(0.035)	(0.030)	(0.025)	(0.028)	(0.033)	(0.033)	(0.033)
Domestic banks	0.0094	0.0317	-0.0042	0.0396 *	-0.0044	-0.0042	-0.0055
	(0.023)	(0.024)	(0.018)	(0.021)	(0.027)	(0.027)	(0.028)
Domestic non-bank financial institutions	0.0077	0.0055	-0.0107	-0.0079	-0.0002	-0.0001	-0.0014
	(0.015)	(0.019)	(0.011)	(0.024)	(0.016)	(0.016)	(0.016)
Domestic company groups and holdings	0.0364	0.0493 *	0.0214	-0.0195	-0.0006	0.0000	-0.0052
	(0.026)	(0.029)	(0.026)	(0.033)	(0.013)	(0.013)	(0.012)
Other domestic non-financial companies	0.0292 *	0.0227	0.0203	0.0114	0.0261	0.0261	0.0259
	(0.016)	(0.021)	(0.014)	(0.015)	(0.019)	(0.019)	(0.020)
Foreign investors	0.0547 ***	0.0628 ***	0.0425 ***	0.0758 ***	0.0476 ***	0.0478 ***	0.0462 **
	(0.014)	(0.016)	(0.009)	(0.020)	(0.017)	(0.017)	(0.018)
Unspecified insiders	0.0207	0.0103	0.0241 **	0.0089	0.0075	0.0078	0.0052
	(0.018)	(0.019)	(0.011)	(0.019)	(0.017)	(0.017)	(0.017)
Managers	0.0466	0.0239	0.0562 ***	0.0279	0.0320	0.0322	0.0311
	(0.032)	(0.023)	(0.019)	(0.020)	(0.034)	(0.034)	(0.035)
Employees	-0.0312	-0.0460 *	-0.0278	-0.0431	-0.0477	-0.0476	-0.0483
	(0.034)	(0.025)	(0.026)	(0.051)	(0.033)	(0.033)	(0.033)
Interaction term							
Central government × Direct-sale privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Regional/local government × Direct-sale privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Unspecified domestic outsider investors × Direct-sale privatization countries	0.0205	-0.0029	0.0495	0.0110	0.0365	0.0363	0.0379
	(0.042)	(0.084)	(0.033)	(0.058)	(0.036)	(0.037)	(0.037)
Domestic outsider individual investors × Direct-sale privatization countries	0.0832 **	0.1142 **	0.0154	0.1477 **	0.0661 *	0.0662 *	0.0644
	(0.040)	(0.047)	(0.025)	(0.058)	(0.040)	(0.040)	(0.041)
Unspecified domestic outsider institutional investors × Direct-sale privatization countries	0.0856 *	0.1155 **	-0.0347 *	-0.0241	0.0945 **	0.0945 **	0.0949 **
	(0.047)	(0.052)	(0.018)	(0.060)	(0.039)	(0.040)	(0.039)
Unspecified domestic financial institutions × Direct-sale privatization countries	0.0655	0.0826 *	0.0499	0.0610	0.0431	0.0430	0.0433
	(0.047)	(0.042)	(0.045)	(0.062)	(0.041)	(0.042)	(0.040)
Domestic banks × Direct-sale privatization countries	-0.0288	-0.0980	-0.0344	-0.2731 ***	0.0494	0.0483	0.0571
	(0.078)	(0.074)	(0.077)	(0.080)	(0.071)	(0.072)	(0.074)
Domestic non-bank financial institutions × Direct-sale privatization countries	0.0856 **	0.0588	0.0448 *	0.1501 **	0.0683 *	0.0684 *	0.0671 *
	(0.038)	(0.079)	(0.023)	(0.066)	(0.036)	(0.036)	(0.037)
Domestic company groups and holdings × Direct-sale privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Other domestic non-financial companies × Direct-sale privatization countries	0.0126	0.0349	-0.0348	0.0500	0.0511	0.0501	0.0586
	(0.041)	(0.043)	(0.036)	(0.047)	(0.041)	(0.041)	(0.045)
Foreign investors × Direct-sale privatization countries	0.0282	0.0256	-0.0167	0.0182	0.0100	0.0107	0.0018
	(0.024)	(0.026)	(0.020)	(0.050)	(0.027)	(0.028)	(0.029)
Unspecified insiders × Direct-sale privatization countries	0.0429	0.0523 *	0.0079	-0.0032	0.0461 *	0.0456 *	0.0492 *
	(0.028)	(0.030)	(0.028)	(0.060)	(0.026)	(0.027)	(0.026)
Managers × Direct-sale privatization countries	-0.0068	0.0261	-0.0309	-0.0184	0.0167	0.0165	0.0179
	(0.049)	(0.045)	(0.056)	(0.052)	(0.041)	(0.041)	(0.042)
Employees × Direct-sale privatization countries	0.0715	0.1232 ***	0.0572	0.0595	0.0879 *	0.0880 *	0.0862 *
	(0.051)	(0.046)	(0.046)	(0.089)	(0.046)	(0.046)	(0.047)
Direct-sale privatization countries	-0.0293	-0.0393 **	0.0153	-0.0139	-0.0193	-0.0198	-0.0154
	(0.018)	(0.020)	(0.017)	(0.047)	(0.025)	(0.025)	(0.032)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.182	0.266	0.383	0.537	-	0.060	0.016

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13][c]	[14][d]
Ownership variable type (Unspecified government)							
Central government	-1.4221	-1.5624	-8.8942***	-5.1117*	1.2532*	1.1852*	1.4598*
	(1.230)	(1.523)	(3.267)	(2.999)	(0.652)	(0.639)	(0.754)
Regional/local government	-2.0657	-1.9665	-20.0998***	-11.2271	-0.3656	-0.4200	-0.1993
	(1.672)	(1.996)	(3.849)	(8.148)	(0.558)	(0.608)	(0.433)
Unspecified domestic outsider investors	-0.0305	-0.3188	-7.0920***	-3.3429*	0.6984*	0.6897*	0.7231*
	(0.572)	(0.728)	(2.694)	(1.811)	(0.388)	(0.388)	(0.400)
Domestic outsider individual investors	0.5231	0.3782	1.9831	-0.5590	0.3166	0.3131	0.3253
	(0.567)	(0.642)	(1.478)	(0.846)	(0.609)	(0.615)	(0.613)
Unspecified domestic outsider institutional investors	0.6850	0.6018	4.6812*	0.2045	0.5084	0.5090	0.5005
	(0.777)	(0.695)	(2.661)	(1.066)	(0.592)	(0.599)	(0.592)
Unspecified domestic financial institutions	-0.4034	-0.8683	2.7439	-1.9346	-0.4649	-0.4632	-0.4731
	(0.836)	(0.720)	(2.033)	(1.179)	(0.739)	(0.746)	(0.745)
Domestic banks	-0.5879	0.0166	-3.2219	1.1447	-0.2783	-0.2876	-0.2531
	(0.636)	(0.788)	(2.280)	(0.747)	(0.576)	(0.582)	(0.583)
Domestic non-bank financial institutions	-0.8160	-0.8635	-2.9116	-1.5527	-0.0970	-0.1068	-0.0739
	(0.580)	(0.711)	(1.979)	(1.077)	(0.489)	(0.494)	(0.493)
Domestic company groups and holdings	0.4394	1.3671	-0.9512	-1.9669	0.1042	0.1020	0.1191
	(0.822)	(1.102)	(2.612)	(1.209)	(0.448)	(0.455)	(0.452)
Other domestic non-financial companies	0.3812	0.2052	-1.2302	1.1534*	0.8012	0.7903	0.8322
	(0.580)	(0.754)	(2.248)	(0.679)	(0.540)	(0.547)	(0.542)
Foreign investors	2.1130***	1.8671***	5.4430***	2.8685***	1.4131***	1.4396***	1.3183***
	(0.652)	(0.574)	(1.348)	(0.848)	(0.421)	(0.424)	(0.429)
Unspecified insiders	0.4287	0.4927	1.8311	-0.7670	0.5600	0.5599	0.5550
	(0.668)	(0.666)	(2.503)	(1.146)	(0.421)	(0.428)	(0.415)
Managers	0.8706*	0.7294	7.0130**	0.9892	0.9026	0.8898	0.9531
	(0.523)	(0.586)	(2.852)	(0.746)	(0.629)	(0.633)	(0.642)
Employees	-0.4258	-1.4092*	-1.8748	-2.1195*	-0.4407	-0.4444	-0.4313
	(0.505)	(0.829)	(3.337)	(1.244)	(0.609)	(0.612)	(0.620)
Interaction term							
Central government × Direct-sale privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Regional/local government × Direct-sale privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Unspecified domestic outsider investors × Direct-sale privatization countries	1.2870	1.8116	5.0832	1.1460	1.7942	1.7941	1.7754
	(1.383)	(1.359)	(4.503)	(4.036)	(1.161)	(1.161)	(1.214)
Domestic outsider individual investors × Direct-sale privatization countries	1.9352	2.1384	3.8025	9.1243**	2.3551*	2.3585*	2.3446
	(1.379)	(1.736)	(4.007)	(4.203)	(1.376)	(1.380)	(1.425)
Unspecified domestic outsider institutional investors × Direct-sale privatization countries	0.5761	1.1982	-5.9799	-3.4267	1.9199*	1.9043*	1.9766*
	(1.714)	(1.514)	(3.687)	(3.552)	(1.113)	(1.123)	(1.128)
Unspecified domestic financial institutions × Direct-sale privatization countries	3.5086**	2.9466***	3.5324	5.2295	2.5747**	2.5796**	2.5460**
	(1.390)	(1.073)	(3.759)	(3.682)	(1.113)	(1.126)	(1.122)
Domestic banks × Direct-sale privatization countries	1.1817	-2.0204	12.1586*	-6.6150	2.2436	2.2325	2.2830
	(2.811)	(2.706)	(6.794)	(5.178)	(1.723)	(1.747)	(1.718)
Domestic non-bank financial institutions × Direct-sale privatization countries	4.0856***	3.3901*	8.9310**	11.6299***	2.3846**	2.4095**	2.3213**
	(1.286)	(2.042)	(4.259)	(4.186)	(1.097)	(1.101)	(1.128)
Domestic company groups and holdings × Direct-sale privatization countries	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped	Dropped
Other domestic non-financial companies × Direct-sale privatization countries	1.2694	0.7946	1.6728	2.5811	1.9005	1.9021	1.8597
	(1.665)	(1.536)	(5.518)	(3.006)	(1.203)	(1.215)	(1.222)
Foreign investors × Direct-sale privatization countries	1.7425	1.0553	-1.8308	4.4512	0.9914	1.0003	0.9569
	(1.578)	(1.130)	(2.828)	(4.039)	(1.489)	(1.494)	(1.554)
Unspecified insiders × Direct-sale privatization countries	2.6255**	2.0816**	3.1094	2.7818	2.0834**	2.0900**	2.0479**
	(1.233)	(1.038)	(4.974)	(4.231)	(0.969)	(0.979)	(0.978)
Managers × Direct-sale privatization countries	-0.0677	-0.0948	-11.3434**	-0.5207	1.1695	1.1676	1.1469
	(1.197)	(1.144)	(4.412)	(3.282)	(1.219)	(1.219)	(1.272)
Employees × Direct-sale privatization countries	1.1316	2.5041*	-1.9225	-0.1967	2.4819*	2.4726*	2.5007*
	(1.226)	(1.275)	(3.883)	(3.445)	(1.303)	(1.301)	(1.365)
Direct-sale privatization countries	-1.3401	-1.2439	2.0828	-2.2093	-1.6709	-1.6174	-1.9086
	(1.010)	(0.906)	(2.363)	(3.308)	(1.406)	(1.370)	(1.646)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.222	0.293	0.617	0.419	-	0.074	0.012

Notes:

[a] Breusch–Pagan test: χ^2=1070.29, p=0.000

[b] Hausman test: χ^2=119.43, p=0.000

[c] Breusch–Pagan test: χ^2=1277.27, p=0.000

[d] Hausman test: χ^2=21.52, p=1.000

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.

Supplement 5. Meta-regression analysis of the idiosyncrasy of slow-speed privatization countries: estimation using the basic category of ownership

(a) Dependent variable — PCC

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [1/SE]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[1]	[2]	[3]	[4]	[5]	[6] [a]	[7] [b]
Ownership variable type (Unspecified government)							
Central government	0.0482 ***	0.0702 ***	0.0172	0.0506 *	0.0367 ***	0.0368 ***	0.0356 ***
	(0.018)	(0.022)	(0.014)	(0.030)	(0.013)	(0.013)	(0.013)
Regional/local government	0.0103	0.0322	-0.0208	0.0175	-0.0012	-0.0011	-0.0024
	(0.018)	(0.022)	(0.014)	(0.030)	(0.013)	(0.013)	(0.013)
Unspecified domestic outsider investors	0.0136	0.0234	0.0211	-0.0041	0.0373 **	0.0373 **	0.0374 **
	(0.014)	(0.016)	(0.020)	(0.022)	(0.016)	(0.016)	(0.018)
Domestic outsider individual investors	0.0267	0.0334 *	0.0148	0.0127	0.0225	0.0225	0.0225
	(0.017)	(0.020)	(0.010)	(0.012)	(0.018)	(0.019)	(0.019)
Unspecified domestic outsider institutional investors	0.0219	0.0418 **	0.0235	0.0104	0.0211	0.0212	0.0205
	(0.018)	(0.016)	(0.015)	(0.017)	(0.014)	(0.014)	(0.014)
Unspecified domestic financial institutions	-0.0345	-0.0451	-0.0285	-0.0975 ***	-0.0173	-0.0175	-0.0168
	(0.032)	(0.029)	(0.026)	(0.026)	(0.029)	(0.029)	(0.029)
Domestic banks	-0.0012	0.0110	-0.0147	0.0277 *	-0.0150	-0.0149	-0.0163
	(0.020)	(0.021)	(0.019)	(0.016)	(0.018)	(0.018)	(0.018)
Domestic non-bank financial institutions	0.0010	0.0049	-0.0074	-0.0116	-0.0017	-0.0016	-0.0025
	(0.015)	(0.019)	(0.013)	(0.017)	(0.015)	(0.015)	(0.016)
Domestic company groups and holdings	0.0074	0.0293	-0.0240 *	0.0152	-0.0041	-0.0040	-0.0053
	(0.018)	(0.022)	(0.014)	(0.030)	(0.013)	(0.013)	(0.013)
Other domestic non-financial companies	0.0299 *	0.0234	0.0097	0.0125	0.0360 **	0.0358 **	0.0365 **
	(0.015)	(0.020)	(0.017)	(0.017)	(0.016)	(0.017)	(0.017)
Foreign investors	0.0443 ***	0.0517 ***	0.0285 **	0.0626 ***	0.0317 ***	0.0321 ***	0.0279 **
	(0.012)	(0.012)	(0.012)	(0.014)	(0.012)	(0.012)	(0.012)
Unspecified insiders	0.0390 ***	0.0320 **	0.0269 ***	0.0042	0.0215 *	0.0217 *	0.0202
	(0.013)	(0.016)	(0.009)	(0.013)	(0.013)	(0.013)	(0.013)
Managers	0.0114	0.0257	0.0249	0.0143	-0.0050	-0.0047	-0.0073
	(0.021)	(0.021)	(0.026)	(0.016)	(0.019)	(0.019)	(0.021)
Employees	-0.0487	0.0008	-0.0195	-0.0730	-0.0521	-0.0519	-0.0533
	(0.038)	(0.025)	(0.024)	(0.062)	(0.042)	(0.043)	(0.044)
Interaction term							
Central government × Slow-speed privatization countries	-0.0526 *	-0.0716 **	-0.0092	-0.0472	-0.0067	-0.0071	-0.0047
	(0.029)	(0.032)	(0.026)	(0.047)	(0.026)	(0.026)	(0.028)
Regional/local government × Slow-speed privatization countries	-0.0185	-0.0299	0.0062	0.0173	0.0134	0.0135	0.0119
	(0.025)	(0.032)	(0.028)	(0.047)	(0.022)	(0.022)	(0.024)
Unspecified domestic outsider investors × Slow-speed privatization countries	0.0541	0.0988	-0.0129	0.0323	0.0126	0.0132	0.0082
	(0.039)	(0.086)	(0.035)	(0.043)	(0.032)	(0.032)	(0.030)
Domestic outsider individual investors × Slow-speed privatization countries	-0.0305	-0.0559	0.0223	-0.0872 *	-0.0199	-0.0201	-0.0187
	(0.035)	(0.038)	(0.046)	(0.047)	(0.024)	(0.024)	(0.025)
Unspecified domestic outsider institutional investors × Slow-speed privatization countries	0.0121	-0.0200	0.0254	0.0300	-0.0186	-0.0185	-0.0191
	(0.028)	(0.028)	(0.032)	(0.040)	(0.026)	(0.026)	(0.026)
Unspecified domestic financial institutions × Slow-speed privatization countries	0.0982 **	0.1027 **	0.1116 **	0.1389 ***	0.1056	0.1045	0.1143
	(0.047)	(0.044)	(0.048)	(0.053)	(0.079)	(0.078)	(0.093)
Domestic banks × Slow-speed privatization countries	0.0587	0.0946 **	0.0642	0.0339	0.0894	0.0889	0.0933
	(0.056)	(0.040)	(0.051)	(0.044)	(0.088)	(0.089)	(0.093)
Domestic non-bank financial institutions × Slow-speed privatization countries	0.1247 ***	0.1249 ***	0.0608	0.1441 ***	0.0869 ***	0.0869 ***	0.0883 ***
	(0.021)	(0.024)	(0.075)	(0.043)	(0.023)	(0.023)	(0.023)
Domestic company groups and holdings × Slow-speed privatization countries	0.0761 **	0.0438	0.1108 ***	-0.0223	0.0378	0.0402	0.0178
	(0.037)	(0.041)	(0.039)	(0.050)	(0.025)	(0.026)	(0.024)
Other domestic non-financial companies × Slow-speed privatization countries	-0.0366	-0.0253	-0.0045	0.0014	-0.0834 ***	-0.0833 ***	-0.0836 ***
	(0.021)	(0.027)	(0.039)	(0.051)	(0.022)	(0.023)	(0.022)
Foreign investors × Slow-speed privatization countries	0.0691 ***	0.0853 ***	0.0628 *	0.0720 *	0.0611 *	0.0612 *	0.0632
	(0.026)	(0.023)	(0.034)	(0.037)	(0.035)	(0.035)	(0.041)
Unspecified insiders × Slow-speed privatization countries	-0.0247	-0.0589	-0.0501 *	0.0040	-0.0110	-0.0111	-0.0109
	(0.037)	(0.041)	(0.029)	(0.042)	(0.032)	(0.032)	(0.034)
Managers × Slow-speed privatization countries	0.0685	0.0113	0.0725 *	0.0334	0.0770 **	0.0766 **	0.0793 ***
	(0.043)	(0.036)	(0.040)	(0.038)	(0.031)	(0.031)	(0.030)
Employees × Slow-speed privatization countries	0.0660	-0.0149	0.0373	0.0708	0.0516	0.0515	0.0527
	(0.044)	(0.040)	(0.036)	(0.086)	(0.046)	(0.046)	(0.047)
Slow-speed privatization countries	-0.0278 *	-0.0249	-0.0460 *	-0.0372	-0.0460 **	-0.0447 **	-0.0725
	(0.014)	(0.015)	(0.026)	(0.037)	(0.022)	(0.022)	(0.045)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.206	0.289	0.392	0.543	-	0.077	0.021

(b) Dependent variable — t value

Estimator (Analytical weight in parentheses)	Cluster-robust OLS	Cluster-robust WLS [Quality level]	Cluster-robust WLS [N]	Cluster-robust WLS [$1/SE$]	Multilevel mixed-effects RML	Cluster-robust random-effects panel GLS	Cluster-robust fixed-effects panel LSDV
Meta-independent variable (Default) / Model	[8]	[9]	[10]	[11]	[12]	[13][c]	[14][d]
Ownership variable type (Unspecified government)							
Central government	0.7607	1.6127 *	-3.1176	0.1888	1.1248 ***	1.1255 ***	1.1122 **
	(0.578)	(0.920)	(2.434)	(1.693)	(0.425)	(0.429)	(0.432)
Regional/local government	-0.2368	0.6152	-4.1176 *	-0.6959	0.1273	0.1280	0.1147
	(0.578)	(0.920)	(2.434)	(1.685)	(0.425)	(0.429)	(0.432)
Unspecified domestic outsider investors	-0.0700	0.0981	-0.4458	-3.6747 ***	1.0028 **	0.9909 **	1.0367 **
	(0.546)	(0.608)	(2.481)	(1.384)	(0.438)	(0.439)	(0.453)
Domestic outsider individual investors	1.0307	0.8255	1.8285	0.7978	0.9319	0.9324	0.9271
	(0.629)	(0.682)	(1.660)	(0.928)	(0.596)	(0.602)	(0.603)
Unspecified domestic outsider institutional investors	1.0366	2.0505 *	3.7050	0.0611	1.4466 *	1.4444 *	1.4487 *
	(1.157)	(1.127)	(2.802)	(1.425)	(0.848)	(0.858)	(0.852)
Unspecified domestic financial institutions	0.0038	-0.4535	1.8371	-1.2431	-0.1572	-0.1559	-0.1658
	(0.825)	(0.715)	(2.367)	(1.269)	(0.711)	(0.718)	(0.718)
Domestic banks	-0.5483	-0.2570	-3.2066	1.3132 *	-0.2750	-0.2757	-0.2830
	(0.626)	(0.770)	(2.515)	(0.763)	(0.577)	(0.581)	(0.586)
Domestic non-bank financial institutions	-0.6408	-0.6116	-0.9069	-1.3069	0.0863	0.0848	0.0795
	(0.559)	(0.702)	(2.026)	(1.024)	(0.507)	(0.511)	(0.515)
Domestic company groups and holdings	-0.3172	0.5350	-4.2035 *	-0.7285	0.0468	0.0475	0.0341
	(0.578)	(0.920)	(2.434)	(1.692)	(0.425)	(0.429)	(0.432)
Other domestic non-financial companies	0.5988	0.2798	-1.7809	1.4999 **	1.1155 **	1.1099 **	1.1229 **
	(0.569)	(0.702)	(2.561)	(0.757)	(0.519)	(0.524)	(0.527)
Foreign investors	2.0093 ***	1.5269 ***	4.2646 **	3.3571 ***	1.3343 ***	1.3593 ***	1.2416 **
	(0.715)	(0.460)	(1.973)	(1.215)	(0.504)	(0.511)	(0.507)
Unspecified insiders	1.7432 ***	1.4054 **	3.3662 **	-0.3912	1.2168 **	1.2244 **	1.1953 **
	(0.548)	(0.636)	(1.417)	(0.929)	(0.542)	(0.547)	(0.549)
Managers	0.1947	0.4802	1.5934	1.1000	0.3230	0.3058	0.3872
	(0.574)	(0.562)	(2.854)	(0.827)	(0.504)	(0.505)	(0.524)
Employees	-0.8849 *	-0.9409	-1.9519	-3.0626 **	-0.3351	-0.3423	-0.3153
	(0.531)	(0.775)	(2.934)	(1.448)	(0.778)	(0.779)	(0.805)
Interaction term							
Central government × Slow-speed privatization countries	-2.7650 *	-4.0557 **	-6.2417	-5.6330	0.5504	0.4006	1.0118
	(1.612)	(1.904)	(5.051)	(4.079)	(1.074)	(1.059)	(1.236)
Regional/local government × Slow-speed privatization countries	-2.9707	-4.1747	-17.0904 ***	-11.5395	-0.5429	-0.6808	-0.1079
	(3.249)	(3.594)	(4.942)	(9.573)	(1.152)	(1.281)	(0.832)
Unspecified domestic outsider investors × Slow-speed privatization countries	0.6049	0.3968	-8.7231 *	0.8200	0.0558	0.0481	0.0849
	(0.978)	(1.111)	(5.204)	(2.616)	(0.555)	(0.555)	(0.583)
Domestic outsider individual investors × Slow-speed privatization countries	-0.4664	-0.2982	3.3571	-2.0575	-0.5418	-0.5638	-0.4557
	(0.828)	(1.035)	(4.227)	(1.902)	(0.685)	(0.694)	(0.694)
Unspecified domestic outsider institutional investors × Slow-speed privatization countries	-0.0955	-1.4271	-3.0320	2.0206	-1.1683	-1.1634	-1.1696
	(1.259)	(1.238)	(3.947)	(2.459)	(0.912)	(0.923)	(0.918)
Unspecified domestic financial institutions × Slow-speed privatization countries	1.1706	0.7925	6.9589	0.5554	1.3154	1.3224	1.2483
	(1.201)	(1.030)	(5.198)	(2.583)	(0.989)	(1.002)	(0.991)
Domestic banks × Slow-speed privatization countries	1.2221	1.7746 *	2.3249	-2.8711	1.3651	1.3439	1.4493
	(1.042)	(1.035)	(3.832)	(2.030)	(1.119)	(1.124)	(1.148)
Domestic non-bank financial institutions × Slow-speed privatization countries	2.1847 ***	2.0901 **	-3.2087	0.6619	1.4031 **	1.3861 **	1.4812 **
	(0.727)	(0.863)	(5.295)	(2.097)	(0.628)	(0.635)	(0.632)
Domestic company groups and holdings × Slow-speed privatization countries	2.4384 **	1.4702	5.3280	-0.2148	1.5138 **	1.5575 **	1.4047 *
	(1.134)	(1.524)	(5.617)	(2.528)	(0.706)	(0.715)	(0.748)
Other domestic non-financial companies × Slow-speed privatization countries	-0.6808	-0.4075	-0.1813	-3.6282	-1.2402 **	-1.2528 **	-1.1771 *
	(0.805)	(0.916)	(5.701)	(2.353)	(0.612)	(0.618)	(0.626)
Foreign investors × Slow-speed privatization countries	3.0136	3.6611 *	7.0869 *	2.6758	0.9859	1.0046	1.0163
	(1.999)	(2.165)	(4.133)	(2.563)	(0.837)	(0.851)	(0.857)
Unspecified insiders × Slow-speed privatization countries	-2.0908 *	-2.1419 **	-15.0309 ***	-1.9389	-0.6727	-0.7054	-0.5861
	(1.229)	(1.061)	(4.284)	(2.295)	(0.772)	(0.787)	(0.765)
Managers × Slow-speed privatization countries	1.3779 *	0.6064	5.1797	-0.1875	1.3853 **	1.3872 **	1.3772 **
	(0.785)	(0.689)	(4.617)	(1.759)	(0.588)	(0.589)	(0.616)
Employees × Slow-speed privatization countries	1.3438 *	0.8828	1.9567	1.3617	0.7776	0.7722	0.8068
	(0.762)	(0.904)	(3.639)	(2.347)	(0.843)	(0.844)	(0.873)
Slow-speed privatization countries	-0.6008	-0.4602	-0.6136	-1.6223	-1.5238	-1.3929	-2.3217
	(0.793)	(0.667)	(3.075)	(1.922)	(1.094)	(1.025)	(1.932)
K	2894	2894	2894	2894	2894	2894	2894
R^2	0.239	0.316	0.633	0.412	-	0.084	0.034

Notes:

[a] Breusch–Pagan test: χ^2=827.67, p=0.000

[b] Hausman test: χ^2=193.14, p=0.000

[c] Breusch–Pagan test: χ^2=1183.51, p=0.000

[d] Hausman test: χ^2=326.07, p=0.000

Figures in parentheses beneath the regression coefficients are robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' estimation. Estimates of other meta-independent variables and the intercept are omitted for brevity. See Table 5 for definition and descriptive statistics of meta-independent variables.