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# Firm efficiency: Domestic owners, coalitions, and FDI

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ABSTRACT

In this paper we analyze the evolution of firm efficiency in the Czech Republic. Using a large panel of more than 190,000 Czech firm/years we study whether firms fully utilize their resources, how firm efficiency evolves over time, and how firm efficiency is determined by ownership structure. We employ a panel version of a stochastic production frontier model for the period 1996–2007 with time-varying efficiency. We differentiate among various degrees of ownership concentration and domestic or foreign origin. In a two-stage set-up we first estimate the degree of firm inefficiency and then the effect of ownership structure on the distance from the efficiency frontier. Our results support the hypothesis that concentrated ownership is positively related to efficiency. FDI has beneficial effects at the microeconomic level. However, we show that a simple majority is not necessarily the best structure to improve efficiency. We further analyze the effects of ownership coalitions and shed light on many other subtleties of how ownership and the specific industry affect firm efficiency.



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## 1. Introduction

The economic reforms of the 1990s in Central and Eastern Europe (CEE) were aimed at creating competitive market economies and more efficient enterprises by firm restructuring, privatization, and supporting institutional reforms (Aussenegg and Jelic, 2007). In this respect, it became evident that ownership structures have become a key determinant of corporate performance in CEE countries (Estrin et al., 2009). We extend the issue of corporate performance to firm efficiency by analyzing the efficiency of Czech firms and how this efficiency is determined by ownership structures. Our results are in line with the corporate governance literature indicating that the efficiency level of a firm depends on its ownership structure (Becht et al., 2003) and the theoretical predictions that concentration ownership is positively related to efficiency in general (Hill and Snell, 1989; Blomström et al., 2001). FDI has beneficial effects at the microeconomic level. However, we show that a simple majority is not necessarily the best structure to improve efficiency. In the private firms under research we are able to distinguish various levels of control that domestic and foreign owners can exert, often in the form of coalitions, and shed light on many other subtleties of how ownership and the specific industry affect firm efficiency.

The related literature almost uniformly suggests that foreign ownership improves firm performance in a better way than domestic ownership. In many instances empirical evidence supports this argument in CEE countries. The positive spillover effects of foreign ownership in the form of Foreign Direct Investment (FDI) on firm performance in the CEE is shown by Hanousek et al. (2011) and specifically reported by Djankov and Hoekman (2000) for Czech firms and by Javorcik (2004) for Lithuanian firms. However, the literature remains largely silent on the effects of particular ownership structures on firm efficiency. The available evidence is infrequent and outdated as it mostly covers the early years of transformation. A few authors analyze this agenda for the pre-transition and early transition years, finding that there is substantial variation in efficiency among firms in the CEE (e.g., Brada and King, 1994; Brada et al., 1994; Konings and Repkin, 1998; among others). Consequently, much of the work targeting the early stage of the transformation frequently uses small and often unrepresentative samples of firms, often combines data from different accounting systems, and has access to limited data on firm ownership. As a result, the studies often treat ownership as a relatively simple categorical concept (e.g., private versus state, state versus foreign, domestic private outsider versus domestic private insider), and are often unable to distinguish the exact extent of ownership by individual owners or even relatively homogeneous groups of owners. These shortcomings prevent many studies from providing accurate evidence on the effects of various ownership categories on technical efficiency as well as corporate performance.

In this paper we fill several gaps in the literature on firm efficiency and extend it as well. First, we analyze firm efficiency in a large and unique firm-level panel data set of more than 190,000 firm/year observations for the period 1996–2007. In this respect our sample of medium and large firms in the Czech Republic surpasses the size of previously used data sets. At the same time we eliminate the problem of the short and early transformation period under research and also avoid the impact of the economic crisis after 2008. Finally, we cover a period when accounting rules conforming to the international standard (IAP) were already in place and eliminate inconsistencies due to differences in reported balance sheet data.

Second, our data set enables us to trace the true development in ownership structure over time in unprecedented detail. In each firm in our sample we are able to detect ownership concentration, domestic or foreign origin, and extent of the control in the company. Following legal standards we distinguish several ownership categories that provide owners with different degrees of control, including coalitions of owners. The rich details on the ownership structure allow us to document its effects on firm efficiency in a level of detail that cannot be contested by earlier studies.

Third, the fact that the firms under research constitute the bulk of the country's economic activity makes our analysis stronger because we eliminate potential bias due to specific sectors. Further, we are able to distinguish the different economic sectors in which firms operate (manufacturing and services), the different technology intensity the firms exhibit, and the knowledge intensity they represent. Along with additional firm characteristics we are able to provide substantially richer results in terms of how these qualities affect firm efficiency.