

Contributions to Management Science

Alper Sönmez

Multinational Companies, Knowledge and Technology Transfer

Turkey's Automotive Industry in Focus

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Alper Sönmez
Department of Economics
Middle East Technical University (METU)
Ankara
Turkey

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*To My Parents
Gülser & İsmail Sönmez
&
My lovely wife Özlem*

Preface

This book provides evidence on how FDI leads to knowledge and technology transfer towards domestic firms by paying attention to the role of multinational companies. The author presents a comprehensive empirical research conducted at firm level in the Turkish automotive industry. Using a representative sample of face-to-face in-depth interviews with top-executives and a survey of top level managers of domestic suppliers, the research analyzes the existence, channels, intensity and determinants, and the kinds of transfers that occur at both inter- and intra-firm level in the industry. The author contends that policies aimed at attracting FDI flows should be reexamined under the findings and insights of this study since it is a necessary—although not sufficient—condition to have an efficient absorptive capacity level and/or skilled human capital stock in order to benefit from these flows. This study has policy implications for the automotive industry as well as practical recommendations for the top-executives of companies and for the public institutions in emerging countries in order to conceive and implement science and technology policies in supporting the knowledge transfers.

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Alper Sönmez

Abstract

This study was motivated by the importance of knowledge and technology for economic development especially in emerging countries. In this context, this book aims to provide evidence on whether FDI occurring in the Turkish economy has any effect on domestic firms, especially whether and to what extent it leads to knowledge and technology transfers (KTTs) towards domestic firms by paying attention to the role of multinationals. In order to do so, a comprehensive empirical research based on case study at firm level in the Turkish automotive industry is conducted. By this study, we aim to investigate the existence, nature, and intensity of transfers, and what—if any—kind of KTTs occur at both inter- and intra-firm level in the industry. In addition, the study aims at revealing those characteristics of domestic suppliers that influence the occurrence of such transfers, the place of the firms in the supply chain of multinationals, and the effect of the aforementioned transfers on the performance of domestic suppliers. In the course of this analysis, absorptive capacity, technological capabilities, the volume and nature of innovation, and research and development (R&D) activities of these firms will be explored as well. For these aims, two different research methods are used to collect detailed data from both suppliers and customers at the firm level. First, a detailed and original questionnaire was designed, and later a survey was conducted face-to-face with the top level managers of the 166 domestic suppliers, as the recipients of the transfers. Secondly, face-to-face in-depth interviews based on a semi-structured interview guide were carried out with the 19 top-executives of the 11 Automotive Main Manufacturers (AMMs) in Turkey, as the sources of the transfers. Our main findings in terms of KTTs at interfirm level can be summarized in this way: foreign suppliers seem to dominate local suppliers in terms of many indicators and absorptive capacity level; it is seen that the transfers occur from AMMs to their domestic suppliers mainly on *providing documentations, assistance for logistic management, quality control, know-how, R&D, co-design and co-development activities, designing, and cost reduction*; compared to foreign suppliers, local suppliers tend to be involved in those production-product-training-related transfers which are less knowledge-intensive and of a lesser quality; being a direct supplier of AMMs in Turkey and therefore being more close to customers in the supply chain exerts a

positive effect on the number, quality, and intensity of the transfers. Moreover, performing R&D activities is found as the most important firm level factor which influences positively *the transfers, strategic collaboration activities with the AMMs, and many technology activities of the suppliers*. The technology policies on attracting more FDI flows should be reviewed under the findings and insights of this study since it is a necessary—although not sufficient—condition to have an efficient absorptive capacity level and/or skilled human capital stock in order to get benefit from these flows.

Keywords: Multinational companies, Knowledge and technology transfer, Foreign direct investment, Automotive industry, Globalization, Turkey

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Alper Sönmez

Abbreviations

AF	All Firms
AMM	Automotive Main Manufacturer
BTSO	Bursa Chamber of Commerce and Industry (Bursa Ticaret ve Sanayi Odası)
DAMM	Domestic Automotive Main Manufacturers
DO	Domestic-Oriented
DOSAB	Demirtaş Organized Industrial Zone (Demirtaş Organize Sanayi Bölgesi)
DS	Domestic Suppliers
DSF	Direct Supplier Firms
EO	Export-Oriented
EU	European Union
FA	Factor Analysis
FDI	Foreign Direct Investment
FF	Foreign Firms
FO	Fully Owned
FS	Foreign Share
GMM	Generalized Method of Moments
GOSB	Gebze Organized Industrial Zone (Gebze Organize Sanayi Bölgesi)
GPN	Global Production Networks
ICI	Istanbul Chamber of Industry (İstanbul Sanayi Odası)
ICOC	Istanbul Chamber of Commerce (İstanbul Ticaret Odası)
IMF	International Monetary Fund
ISSS	Industry and Service Statistics Survey
KOSGEB	Small and Medium Enterprises Development Organization (Küçük ve Orta Ölçekli İşletmeleri Geliştirme ve Destekleme İdaresi Başkanlığı)
KTT	Knowledge and Technology Transfer
LEVPET	Levinsohn and Petrin
LF	Local Firms
METU	Middle East Technical University