İSTANBUL UNIVERSITY PRESS

Istanbul Management Journal
IMJ 95, 2023, 12–21
DOI: 10.26650/imj.2023.95.1335148

RESEARCH ARTICLE

Foreign Direct Investment and Labor Productivity: Evidence from Industrial Firms in Türkiye

Aytuğ Sözüer[1]

[1]Assoc. Prof. Yalova University, Department of International Trade and Finance, Yalova, Turkiye

ABSTRACT

This study aims to determine the presence of foreign direct investment (FDI) spillovers in Türkiye by examining the labor productivity of manufacturing firms. Based on relevant theoretical frameworks and empirical evidence, the research compares foreign-capitalized and domestic companies in Türkiye in 27 industries between 2011 and 2019. The analysis uses a multiple cross-sectional design based on data from the Istanbul Chamber of Industry's annual reports. Throughout the chosen period, consecutive equivalence tests show that labor productivity is comparable among firms in the same industry with both domestic and foreign equity. This finding reveals a convergence in labor productivity levels between foreign-capitalized and domestic firms, confirming foreign ownership's positive influence on Türkiye's manufacturing sector. The finding is consistent with prior research conducted in the Turkish context and supports the notion that FDI facilitates intra-industry spillovers, contributing to the nation's overall labor productivity growth under endogenous growth theory principles. The study highlights several avenues for harnessing the benefits of FDI for Türkiye's economic growth and competitiveness in terms of policy and practice recommendations. Policymakers are encouraged to foster a stable and appealing business environment for foreign capital by implementing regulatory reforms and streamlining bureaucracy. The emphasis on technology transfer and knowledge spillovers should be a priority, with incentives for research collaborations and education programs to enhance the skills of the domestic workforce. Regional development initiatives and sector-specific policies can further optimize the impact of FDI. In addition, domestic companies can also play a pivotal role by engaging in collaborations, investing in human capital, adopting advanced technologies, and embracing a culture of continuous improvement to leverage FDI-induced productivity gains. Future research should look at sector-specific analyses, regional disparities, firm heterogeneity, and the effectiveness of existing FDI-related policies, all of which will contribute to a more comprehensive understanding of FDI's role in Türkiye's labor productivity, competition, and economic development.

Keywords: FDI, spillovers, factor productivity

JEL Codes: F23, J24, O19

Introduction

In 2022, the global foreign direct investment (FDI) stock is estimated to exceed 44 trillion USD. Türkiye's share of this capital accumulation has approached 0.4%, rising from 0.25% during the 2000–2022 period (UNCTAD, 2023). Although this proportion appears to be small, it represents the presence of over 80,000 foreign-capitalized companies in the country and approximately 165 billion USD in international direct investment stock. This substantial capital accumulation adds depth to the country's economy and influences market dynamics.

In the 1950s, the Republic of Türkiye endeavored to encourage foreign investment through enacted laws, and in the 1980s, it adopted neoliberal policies to open up its economy further. Factors such as the Customs Union agreement signed between the European Union and Türkiye in 1995, the approval of Türkiye's candidacy to the EU in 1999, and the start of the membership negotiation process in 2005 have facilitated institutional transformations influencing the flow of FDI into the economy (Koçtürk and Eker, 2012; Togan, 2010). The current consensus suggests that such economic openings to international markets result in efficiency gains in domestic markets (Tintin, 2012).

FDIs are predominantly driven by international companies seeking increased productivity in new resources, markets, or value chains in different countries, expecting above-average returns. Naturally, these companies seek to outperform their competitors

Corresponding Author: Aytuğ Sözüer **E-mail:** aytug.sozuer@yalova.edu.tr
Submitted: 31.07.2023 • **Revision Requested:** 13.09.2023 • **Last Revision Received:** 19.09.2023 • **Accepted:** 13.11.2023

in foreign markets where they take on risks through capital transfers. The consequences of these expectations and the preceding dynamics have sparked interest in the field of strategic management literature.

As Hymer (1960) pointed out, the early stages of international business research have widely accepted that firms operating abroad began at a competitive disadvantage due to their unfamiliarity with the host country's cultural, economic, legal, and similar conditions. Later, as multinational enterprises expanded their scope, the assumption of the situation reversed. Multinational enterprises gained a competitive edge over local firms by transferring their distinctive advantages to their foreign subsidiaries (Caves, 1996; Dunning, 1993; Markusen, 1995). The technological knowledge, economies of scale, supply and marketing networks, general management skills, and strong reputation of these large enterprises were highlighted as factors that made them more successful than local competitors in the countries where they invested (Aitken and Harrison, 1999; Yeaple, 2003).

Labor productivity is a key indicator of competitive advantage in producing goods and services relative to labor input. Higher labor productivity improves economic output per capita without additional labor resources. Increased labor productivity boosts global competitiveness by lowering production costs, attracting foreign investment, and increasing exports. According to OECD data, the overall labor productivity in Türkiye is increasing (1970 index = 26.6; 1995 index = 54.9; 2019 index = 114), which can be attributed to institutional pressures of organizational theory (DiMaggio and Powell, 1983).

This study examines whether international firms, with their assumed distinctive advantages, are advantageous in terms of labor productivity in Türkiye, compared to local competition.

The following sections present the theoretical knowledge and empirical findings of the existing literature. Subsequently, the hypothesis are tested by comparing the labor productivity of foreign-capitalized companies in Türkiye with those of domestic firms, and the findings are discussed.

Literature Review and Hypothesis

Spillover theory

The FDI research has been investigating spillover effects since the 1960s. MacDougall (1960) was among the first to investigate spillovers as potential FDI effects, analyzing their effect on the general welfare. Meanwhile, Corden (1967) explored the effects of FDI on optimal tariff policy. These early studies sought to ascertain the costs and benefits associated with FDI (Blomström & Kokko, 2003).

Spillover effects play a crucial role in shaping the impact of FDI on host economies. These effects can be horizontal and vertical, depending on the type of knowledge transfer and diffusion. Horizontal spillovers occur when knowledge and technology spread among firms in the same industry, whereas vertical spillovers happen when knowledge is transferred between firms at different stages of the production chain, such as between multinational corporations (MNCs) and their local suppliers (Thuy, 2007).

Horizontal spillovers are frequently caused by MNCs' direct interaction with local firms and their exposure to advanced technology, management practices, and marketing techniques. As local firms learn from MNCs and imitate their processes, they can improve their productivity and competitiveness. Furthermore, the presence of MNCs can create positive externalities by attracting skilled workers, fostering innovation, and generating knowledge spillbacks that benefit the local workforce and economy.

Meanwhile, vertical spillovers occur through the integration of local suppliers into the global value chains of MNCs. When local suppliers become part of MNC supply chains, they are exposed to international quality standards, production techniques, and market requirements. This integration can result in increased efficiency, improved production processes, and higher product quality in local supplier firms. Furthermore, access to larger markets through MNCs can enable local suppliers to achieve economies of scale and specialization, boosting their productivity and global competitiveness (Hanousek, Kocenda, & Maurel, 2011).

Theoretical literature suggests that imitation, skills acquisition, competition, and exports can boost host country's productivity (Görg & Greenaway, 2004). These processes are detailed in the following.

Imitation: New products and processes spread through imitation. Reverse engineering is frequently used in technology transfer from developed to developing economies. Simpler products and processes are easier to imitate. However, managerial and organizational innovations are easier to copy. It is unlikely that multinational firms' rents would be eliminated by imitation. However, technological upgrades based on imitation could spillover and boost local firm productivity. A notable spillover effect occurs when a local company increases its productivity by replicating the technology used by MNC affiliates operating in the host market. Another type of spillover occurs when a subsidiary's entry intensifies competition in the host economy, forcing local businesses to use existing technology and resources better. Furthermore, competition may encourage local businesses to seek out new, more efficient technologies, leading to advancements in industries within and outside the affiliate's sector (Blomström & Kokko, 1998). Given foreign investment's association with the parent company's intangible assets, it is regarded as an important channel for technology diffusion, particularly in developing nations. Therefore, foreign investment is likely to transfer hard (e.g., machinery,

blueprints) and soft (e.g., management, information) technologies. This knowledge transfer has two dimensions: generic knowledge, such as management skills and quality systems, and specific knowledge that is difficult to acquire through arm's-length transactions due to the receiving country's policy environment or internalization incentives. By providing expertise in identifying and implementing systems that meet technical specifications and ensure on-time delivery, foreign partners can facilitate local companies' cost-effective learning and upgrading (Djankov & Hoekman, 2000).

Competition: Without monopoly status, an incoming firm will compete with indigenous firms. Even if indigenous firms cannot copy MNCs' technology and production processes, their entry forces them to use existing technology more efficiently, thus increasing productivity. One of the primary benefits of arm's length trade is increased competition, which reduces inefficiency. Competition may hasten the adoption of new technologies. According to Caves (1971:15), "whatever the market structure that results from the influence of direct investment, it can be argued that entry by a foreign subsidiary is likely to produce more active rivalrous behavior and improvement in market performance than would a domestic entry at the same initial scale." Furthermore, user contact is critical to technology diffusion, particularly through MNC affiliates. As potential adopters interact with current users, the uncertainty surrounding innovations decreases, and the likelihood of imitation or adoption increases. Foreign affiliates' presence demonstrates the viability and profitability of new products and processes, thereby encouraging local businesses to adopt and incorporate them into their operations. This process can happen repeatedly as innovations are transferred from the parent MNC to the subsidiary, resulting in sustained productivity gains (Blomström & Kokko, 1998). Spillovers can occur due to direct knowledge transfer from foreign customers to local suppliers, increased MNC requirements for product quality and on-time delivery, and increased demand for intermediate products, allowing local suppliers to benefit from scale economies. Similarly, domestic firms can increase productivity by accessing new, improved, or cost-effective intermediate inputs manufactured by MNCs in upstream industries (Javorcik, 2004).

Skills acquisition. Human capital can aid in the adoption of new technology. Even in low-wage areas, MNCs require skilled labor. They invest in training that cannot be locked in. Labor movement from MNCs to other existing or new firms can improve productivity through two mechanisms: direct spillover to complementary workers and knowledge carried by workers who move.

Exports. Domestic firms can learn to export from MNCs. Exporting necessitates fixed costs to establish distribution networks, transportation infrastructure, and learn about the tastes of foreign consumers, regulatory arrangements, and so on. Such information is usually available to MNCs, who use it to export from the new host country. Local firms can learn to export through collaboration or imitation (Görg & Greenaway, 2004).

In summary, local businesses may experience increased productivity due to linkages with MNC affiliates. By hiring former MNC employees, they could emulate MNC technologies or gain access to specialized skills. In addition, increased competition caused by foreign entry can result in the adoption of new technologies and motivate domestic companies to work harder. Cross-border investment spillovers are thus predicted by economic theory. MNCs typically have firm-specific advantages in areas such as production, organization, marketing, and so on. After establishing a subsidiary, an MNC may not be able to prevent indigenous firms from benefiting from imitation, labor mobility, competition, or export.

However, the extent and nature of spillover effects can vary depending on a number of factors. The host economy's capacity for absorption is critical (Kugler, 2006). Higher levels of human capital, technological infrastructure, and institutions that promote innovation and learning tend to facilitate foreign knowledge absorption and utilization. Government policies, such as intellectual property rights protection and R&D investment, can also impact the effectiveness of spillover effects. Furthermore, MNC characteristics such as their level of engagement with the local economy, the intensity of knowledge-sharing, and the degree of linkages with local firms can all significantly impact the magnitude of spillover effects. MNCs that actively collaborate with local partners, transfer technology, and foster skill development are more likely to generate positive spillover effects.

Empirical studies

Several empirical studies using country-level data have found positive relationships between FDI and labor productivity. For instance, Ramirez (2006a) examined data from Chile between 1960 and 2000. Moreover, Ramirez (2006b) analyzed data from Mexico between 1960 and 2001. Tökes (2019) concentrated on Hungary using data from 1993 to 2013, whereas Vinh (2019) and Asada (2020) investigated Vietnam using data from 1990 to 2017. In a broader analysis that included 20 countries, Tintin explored data from 1984 to 2008. Additionally, Alam, Arshad, and Rajput (2013) examined data from 19 OECD countries from 1980 to 2009. In their meta-analysis, Wooster and Diebel (2010) used a sample of 32 studies to determine the magnitude, significance and direction of FDI spillovers. When measuring the effect of FDI spillovers on output, the results indicated that spillover effects were stronger and more likely to be significant and positive for Asian countries.

Using industry-level data, multiple investigations have found evidence of productivity spillovers from FDI in the manufacturing sector. Thuy (2007) observed a significant link between foreign investors and domestic private sectors, which contributed to

technological spillovers from FDI in Vietnam during 1995–2002. Meanwhile, Bijsterbosch and Kolasa (2010) analyzed data from 1995 to 2005. They found that FDI inflows were critical in accounting for productivity growth in the central and eastern European region, with the extent of FDI's impact on productivity being dependent on the host country's absorptive capacity. Fillat and Woerz (2011) studied data at the industry level for 35 countries from 1987 to 2002, uncovering a positive relationship between FDI and productivity growth in certain industries, particularly in emerging markets. Hussain (2017) investigated Pakistani data from 2002 to 2011, revealing a positive and significant impact of FDI on labor productivity. Furthermore, Serfraz (2018) analyzed the effects of FDI inflows on labor productivity in Pakistan's economy from 1997 to 2016, finding that sector-specific FDI inflows positively affected labor productivity. Desbordes and Franssen (2019) explored the intra- and inter-industry effects of FDI on productivity in 15 emerging market economies between 2000 and 2008, finding that intra-industry FDI significantly positively impacted total labor productivity. Karentina (2019) studied the impact of FDI spillovers on the productivity of domestic firms in different industries based on their intensity of factors in Indonesia using data from 2010 to 2014, indicating that horizontal spillovers were positively associated in the long term within the same industry. However, some studies did not find significant relationships, such as Golejewska (2009), who did not observe positive productivity spillovers to domestic firms in Polish manufacturing from 1993 to 2006, and Vuksic (2016), who did not find significant effects of brownfield or greenfield FDI on labor factor productivity in the Croatian manufacturing industry during the period 1998–2007.

Another research stream utilized firm-level data in various contexts. For example, Djankov and Hoekman (2000) examined data from the Czech Republic from 1992 to 1996, revealing a positive influence of foreign investment on recipient firms' total factor productivity growth. Meanwhile, Javorcik (2004) analyzed data from Lithuania from 1996 to 2000, finding evidence of positive productivity spillovers from FDI via interactions between foreign affiliates and local suppliers in upstream sectors. Sun (2011) demonstrated in 2003 that FDI in China results in significant and positive technology spillovers to domestic firms, thereby increasing labor productivity. Cheng (2012) studied data from Cambodia in 2006, demonstrating that domestic firms benefit from substantial productivity spillovers when their technology level is moderately lower than that of foreign competitors. However, Khawar (2003) used annual data from Mexico in 1990 and found no conclusive evidence of spillovers; however, foreign firms outperformed domestic firms in terms of productivity, indicating a strong direct effect of firm-level foreign investment on individual firm productivity. Similarly, Arnold and Javorcik (2009) examined foreign acquisitions in Indonesia using data from 1983 to 2001, finding that foreign ownership leads to substantial productivity improvements in acquired plants.

Within the Turkish context, a significant body of research has investigated the spillover effects of firms with foreign equity, with somewhat mixed results. For instance, Yaşar and Paul (2007) observed a significant relationship between productivity and foreign ownership, particularly among larger-scale establishments. Their investigation encompassed two industry datasets spanning the years 1990 to 1996. Similarly, Erdoğan (2011) analyzed the horizontal productivity spillover effects of foreign ownership on Turkish firms from 2004 to 2008, revealing that domestic enterprises experienced productivity gains from foreign-owned firms. Furthermore, Arısoy (2012) identified a positive contribution of FDI to total factor productivity, attributable to technological spillovers, during the broader period of 1960 to 2005. Günşen (2015) examined the economic results of FDIs specifically within the Turkish automotive industry from 1997 to 2010, where substantial evidence was found that FDI significantly improved productivity levels in this sector. However, a subset of studies presents contradictory findings. For example, Arslanoğlu (2000) developed models that indicated that the presence of foreign firms did not significantly impact domestic firms' productivity. Foreign firms were found to exert competitive pressure on the Turkish manufacturing industry, based on data from the largest 500 firms in 1993. Similarly, Lenger and Taymaz (2006) found that horizontal spillovers from foreign firms were insignificant from 1995 to 2000. Moreover, Fatima (2015) found that horizontal links led to lower productivity levels among firms, whereas vertical links positively influenced local productivity levels from 2003 to 2010.

These disparate findings highlight the complexities of the relationship between foreign ownership, spillover effects, and productivity in Turkey. As a result, more research is needed to better understand the complexities of this phenomenon and its implications for the country's economic landscape.

Using a relevant theoretical framework and evidence from multiple studies conducted in the Turkish context, this analysis predicts that the intra-industry labor productivity level of domestic firms will not be significantly lower or higher than that of foreign-capitalized firms due to factors such as imitation, competition, talent acquisition, and export orientation, indicating the presence of spillover effects. Thus,

Hypothesis: The labor productivity of firms with foreign and domestic capital is equivalent.

Research Methodology

Data

The research methodology of this study lies in collecting and analyzing data sourced from the Istanbul Chamber of Industry's annual Türkiye's Top Industrial Enterprises reports between 2011 and 2019 (ISO). This particular period is purposefully selected, representing a relatively stable economic period after the Great Recession and the onset of the COVID-19 pandemic.

Initially, reports contained a total of 9,000 observations spanning 9 years. However, several filtering criteria were applied to ensure the data set's quality and relevance. Undisclosed data lines, firms with fewer than 50 employees, state-owned enterprises, and businesses with foreign equity ownership ranging from 10% to 50% were excluded from the data set. The latter exclusion was based on the assumption that decision-making rights in such firms might be ambiguous for outsiders. After these filters were applied, the data set was distilled to a refined sample of 5,566 observations spanning 9 years and encompassing 27 different industries classified according to NACE.

Given that the dataset displayed yearly imbalances, rendering it unsuitable for panel analysis, a "multiple cross-sectional design" was employed. The year-by-year labor productivity figures were calculated as the ratio of the total sales generated from goods produced to the average number of employees. This calculation enabled a meaningful comparison of labor productivity levels between each foreign-capitalized firm and the *average* of all domestic firms within the foreign firms' respective industry. Finally, the data set included two groups of labor productivity data for nine different years.

Analysis

Table 1 represents the descriptive statistics of the paired samples in terms of labor productivity values. This table includes year-by-year data on the number of firms, the means, standard deviations, and correlations between each foreign-capitalized firm's labor productivity and domestic firms' average labor productivity in the respective industry.

Table 1. Descriptive statistics

Year	Equity	N	Labor Productivity		
			Mean	Std. Dev.	Correlation
2011	Foreign (F)	110	646,156	619,385	0.649**
	Domestic (D)		622,107	501,985	
2012	F	113	605,302	510,086	0.506**
	D		625,636	452,797	
2013	F	108	708,994	602,556	0.330**
	D		669,972	551,893	
2014	F	79	668,953	498,961	0.318**
	D		643,584	304,872	
2015	F	76	744,991	619,976	0.342**
	D		673,346	264,612	
2016	F	75	1,000,150	1,643,138	0.455**
	D		722,464	277,004	
2017	F	71	1,266,715	1,716,436	0.352**
	D		985,097	412,347	
2018	F	63	1,308,965	1,001,954	0.352**
	D		1,166,067	496,183	
2019	F	60	1,409,354	1,115,103	0.249*
	D		1,308,818	572,694	

** p = 0.055; ** p < 0.01*

Table 2 shows the results of the paired t-test for nine consecutive years. Differences are insignificant in each year. This means that the labor productivity of foreign-capitalized firms paired with the average labor productivity of domestic firms is not significantly higher or lower than each other throughout the period.

Table 2. Paired t-tests for labor productivity differences

Year	Mean	Std. Dev.	t	df	Sig.
2011	24,049	481,870	0.523	109	0.602
2012	-20,334	481,333	-0.449	112	0.654
2013	39,022	669,472	0.606	107	0.546
2014	25,369	495,051	0.455	78	0.650
2015	71,644	584,873	1.068	75	0.289
2016	277,686	1,537,112	1.565	74	0.122
2017	281,618	1,617,974	1.467	70	0.147
2018	142,898	948,660	1.196	62	0.236
2019	100,537	1,119,418	0.696	59	0.489

However, the research hypothesis cannot be said to be supported solely by this finding. To accomplish this, this study employed "equivalence tests" to establish that two groups have a high level of *similarity* in terms of a specific outcome, to the point where any observed differences between them are deemed insignificant or negligible (Mara & Cribbie, 2012). It is a paired sample version of two one-sided tests (TOST-P).[1] Here, the difference in the foreign-capitalized firms' labor productivity and the domestic firms' average labor productivity is tested to determine whether it is significantly greater or less than 0 on a year-by-year basis. Table 3 displays the results of the equivalence test for each year.

Table 3. Equivalence Tests

Year	Labor productivity	t	df	Sig.
2011	F - D > 0	0,523	109	0,301
	F - D < 0			0,699
2012	F - D > 0	-0,449	112	0,673
	F - D < 0			0,327
2013	F - D > 0	0,606	107	0,273
	F - D < 0			0,727
2014	F - D > 0	0,455	78	0,325
	F - D < 0			0,675
2015	F - D > 0	1,068	75	0,144
	F - D < 0			0,856
2016	F - D > 0	1,565	74	0,061
	F - D < 0			0,939
2017	F - D > 0	1,467	70	0,073
	F - D < 0			0,927
2018	F - D > 0	1,196	62	0,118
	F - D < 0			0,882
2019	F - D > 0	0,696	59	0,245
	F - D < 0			0,755

α level: 0.05

[1] Equivalence test for paired samples is not a function in SPSS statistical software but it's available in Minitab software.

Findings reveal that firms with foreign equity have labor productivity levels that are not significantly higher or lower than those of domestic firms during the specified periods, and they are statistically close to each other. Consequently, the research hypothesis positing labor productivity *equivalence* between foreign-capitalized and domestic firms receives empirical support. Furthermore, this result indicates the likelihood of spillover effects within the Turkish context.

Conclusion

Numerous developing nations seek to attract FDI to promote economic growth through knowledge transfer. The argument is based on the assumption that foreign ownership substantially benefits the host country because foreign investors bring advanced technologies and effective management practices, which may result in positive spillover effects. According to empirical evidence, which presents mixed outcomes, the extent of spillovers varies depending on the host country's technological level, the characteristics of industries and firms, and the characteristics of the FDI itself. To explain these contradictory results, researchers have focused on factors such as the technological gap between MNCs and the host country, the absorptive capacity of domestic firms, and the level of competition in the local market. Furthermore, extensive empirical research using micro-level data has revealed that multinational firms and their affiliates are larger, have higher capital intensity, use more skilled workers, invest more in physical and intangible assets, and pay higher wages than domestic firms. This body of evidence suggests that firms engaged in foreign investment and production have higher productivity in their home countries, implying that foreign affiliates should have a productivity advantage over local firms in the host economy (Contessi, 2009).

This article empirically examines the labor productivity of foreign and domestic firms in Türkiye for the period 2011–2019. The labor productivity levels of these two groups are similar. The finding supports the view that foreign ownership improves labor productivity in the Turkish manufacturing industry, as evidenced by other recent single-country studies (e.g., Asada 2020; Hussain, 2017; Karentina, 2019; Serfraz, 2018; Tökes, 2019; Vinh, 2019). This observation is also consistent with previous research in the Turkish context, such as Arısoy (2012), Erdoğan (2011), and Yaşar and Paul (2007). Regarding the upward trend in aggregate labor productivity in the Turkish economy since the 1970s, this study supports the idea that FDI contributes positively through intra-industry spillovers. This is consistent with the principles of endogenous growth theory (Romer, 1986), which emphasizes the significance of technology diffusion via assimilation and adaptation of foreign technology as a key driver of technological advancement in developing countries.

Based on theoretical approaches and empirical evidence, several policy and managerial implications can be drawn to leverage the benefits of FDI and promote economic growth and competitiveness.

In terms of policy, Türkiye should first diligently endeavor to attract FDI by creating an investor-friendly environment through regulatory reforms and streamlined bureaucratic processes, cultivating a stable and predictable business climate conducive to increased foreign capital investment. Policymakers should also emphasize encouraging foreign firms to introduce advanced technologies and managerial expertise into Türkiye, fostering knowledge spillovers and skill augmentation within domestic sectors. Incentives for technology transfer and research collaborations between foreign and domestic firms can help accelerate this process even further. To maximize the benefits of FDI-related spillovers, the government should also invest in customized education and training programs tailored to the needs of the manufacturing industry. If their skills are upgraded, domestic workers can be better equipped to adapt to modern manufacturing processes and technology.

Additionally, to ensure equitable distribution of FDI benefits across various regions, policymakers should focus on promoting regional development through targeted policies, infrastructure enhancement, and regional incentives, thereby encouraging foreign firms to invest in less developed areas. Finally, given that the impact of FDI varies by industry, policymakers should implement sector-specific policies focusing on areas with the potential for significant productivity gains. By understanding each sector's unique needs and challenges, the effectiveness of FDI on labor productivity can be optimized, propelling Türkiye's manufacturing sector and overall economic growth.

Domestic firms in Türkiye can adopt several managerial strategies to capitalize on the positive contributions of FDI and enhance labor productivity. First, fostering collaboration and knowledge-sharing with foreign-capitalized firms through joint ventures, research partnerships, and industry associations can cultivate a culture of continuous learning and knowledge exchange. In addition, managers should prioritize human capital development by investing in their employees' skills and knowledge through training programs, career development opportunities, and incentives for increased innovation and productivity. Furthermore, embracing technology adoption by being receptive to advanced technologies used by foreign firms and implementing modern manufacturing processes and automation can result in efficiency gains and improved productivity. Finally, fostering a culture of continuous improvement by regularly measuring and benchmarking firm performance against domestic and foreign competitors is critical to identifying areas for improvement and ensuring global market competitiveness. Overall, cultivating an environment that promotes collaboration, technology transfer, and skill development, Türkiye can strengthen its absorptive capacity and maintain its economic growth trajectory.

This empirical analysis has several limitations worth considering. First, the chosen time interval (2011–2019) may not fully capture the long-term effects of foreign ownership on labor productivity. Although it represents a period of relative economic stability, other external factors during these years could have influenced the results. Second, excluding certain firms (state-owned companies, small companies, and firms with foreign equity between 10% and 50%) can introduce sample selection bias and limit the generalizability of the findings. Additionally, the unbalanced nature of the data set used a multiple cross-sectional design, which might restrict the ability to observe and analyze dynamic changes over time accurately. Furthermore, comparing the labor productivity of foreign-capitalized firms with the aggregate average of domestic firms within the same industry could overlook potential variations and nuances among individual domestic firms. Despite these limitations, the study provides valuable information and A sector-specific analysis would provide insights into how FDI impacts labor productivity differently across industries in future research.

Additionally, investigating regional disparities in the impacts of FDI on labor productivity can shed light on the role of regional factors in attracting and benefiting from foreign ownership. Furthermore, research into firm heterogeneity and absorptive capacity would provide valuable insight into which domestic firms can effectively capitalize on FDI-related spillovers. Finally, assessing the efficacy of existing policies and incentives to promote FDI can help guide policy changes. Addressing these research gaps will help us better understand the relationship between foreign ownership, labor productivity, competition, and economic development in Türkiye.

Peer Review: Externally peer-reviewed.
Conflict of Interest: Author declared no conflict of interest.
Financial Disclosure: Author declared no financial support.

ORCID:

Aytuğ Sözüer 0000-0003-2680-2071

REFERENCES

Aitken, B. J., & Harrison, A. E. (1999). Do domestic firms benefit from direct foreign investment? Evidence from Venezuela. *The American Economic Review, 89*(3), 605-618.

Alam, A., Arshad, M. U., & Rajput, W. U. (2013). Relationship of labor productivity, foreign direct investment, and economic growth: Evidence from OECD countries. *Journal of Business and Management Sciences, 1*(6), 133-138.

Arısoy, İ. (2012). The impact of foreign direct investment on total factor productivity and economic growth in Turkey. *The Journal of Developing Areas, 46*(1), 17-29.

Arslanoğlu, E. (2000). Spillover effects of foreign direct investments on Turkish manufacturing industry. *Journal of International Development, 12*, 1111-1130.

Asada, H. (2020). Effects of foreign direct investment and trade on labor productivity growth in Vietnam. *Journal of Risk and Financial Management, 13*(9), 204.

Bijsterbosch, M., & Kolasa, M. (2010). FDI and productivity convergence in Central and Eastern Europe: An industry-level investigation. *Review of World Economics, 145*(4), 689-712.

Blomström, M., & Kokko, A. (1998). Multinational corporations and spillovers. *Journal of Economic Surveys, 12*(2), 1-31.

Blomström, M., & Kokko, A. (2003). The economics of foreign direct investment incentives. *National Bureau of Economic Research. Working Paper 9489*.

Caves, R. E. (1971). International corporations: The industrial economics of foreign investment. *Economica, 38*, 1-27.

Caves, R. E. (1996). *Multinational enterprise and economic analysis*. Cambridge: Cambridge University Press.

Cheng, S. (2012). Foreign direct investment and productivity spillovers: Empirical evidence from Cambodia. *Economics Bulletin, 32*(3), 2015-2025.

Corden, W. M. (1967). Protection and foreign investment. *Economic Record, 43*, 209-232.

Desbordes, R., & Franssen, L. (2019). Foreign direct investment and productivity: A cross-country, multisector analysis. *Asian Development Review, 36*(1), 54-79.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147-160.

Djankov, S., & Hoekman, B. (2000). Foreign investment and productivity growth in Czech enterprises. *The World Bank Economic Review, 14*(1), 49-64.

Dunning, J. H. (1993). *Multinational enterprises and the global economy*. Harlow: Addison-Wesley.

Erdoğan, A. I. (2011). Foreign direct investment and productivity spillovers: Evidence from Turkey. *Journal of Applied Finance & Banking, 1*(4), 185-199.

Fatima, S. T. (2016). Productivity spillovers from foreign direct investment: Evidence from Turkish micro-level data. *The Journal of International Trade & Economic Development, 25*(3), 291-324.

Fillat, C., & Woerz, J. (2011). Good or bad? The influence of FDI on productivity growth. An industry-level analysis. *The Journal of International Trade & Economic Development: An International and Comparative Review, 20*(3), 293-328.

Golejewska, A. (2009). Productivity spillovers from foreign direct investment in Polish manufacturing 1993-2006. *Working Papers of Economics of European Integration Division 0902*.

Görg, H., & Greenaway, D. (2004). Much ado about nothing? Do domestic firms benefit from foreign direct investment? *The World Bank Research Observer, 19*(2), 171-197.

Günşen, İ. (2015). Automotive industry: Economic effects of foreign direct investments in Turkey. *Uludağ Journal of Economy and Society, 34*(2), 19-34.

Hanousek, J., Kočenda, E., & Maurel, M. (2011). Direct and indirect effects of FDI in emerging European markets: A survey and meta-analysis. *Economic Systems, 35*(3), 301-322.

Hussain, A. (2017). Foreign direct investment (FDI) and its impact on the productivity of domestic firms in Pakistan. *Pakistan Business Review, January*, 792-812.

Hymer, S. H. (1960). *The international operations of national firms: A study of direct foreign investment* (Ph.D. Dissertation). The Massachusetts Institute of Technology, USA.

ISO (Istanbul Chamber of Industry). Top 500 Industrial Enterprises. https://www.iso.org.tr/projects/top-500-industrial-enterprises.

Javorcik, B. S. (2004). Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages. *The American Economic Review, 94*(3), 605-627.

Karentina, R. (2019). The spillover effects of foreign direct investment on labor productivity. *Economic Journal of Emerging Markets, 11*(1), 32-45.

Khawar, M. (2003). Productivity and foreign direct investment – Evidence from Mexico. *Journal of Economic Studies, 30*(1), 66-76.

Koçtürk, M., & Eker, M. (2012). Dünyada ve Türkiye'de doğrudan yabancı sermaye yatırımları ve çok uluslu şirketlerin gelişimi. *Tarım Ekonomisi Dergisi, 18*(1), 35-42.

Kugler, M. (2006). Spillovers from foreign direct investment: Within or between industries? *Journal of Development Economics, 80*(2), 444-477.

Lenger, A., & Taymaz, E. (2006). To innovate or to transfer? A study on spillovers and foreign firms in Turkey. *Journal of Evolutionary Economics, 16*(1-2), 137-153.

MacDougall, G. D. A. (1960). The benefits and costs of private investment from abroad: A theoretical approach. *Economic Record, 36*, 13-35.

Mara, C. A., & Cribbie, R. A. (2012). Paired-sample tests of equivalence. *Communications in Statistics - Simulation and Computation, 41*(10), 1928-1943.

Markusen, J. R. (1995). The boundaries of multinational enterprises and the theory of international trade. *The Journal of Economic Perspectives, 9*(2), 169-189.

Matthias Arnold, J., & Javorcik, B. S. (2009). Gifted kids or pushy parents? Foreign direct investment and plant productivity in Indonesia. *Journal of International Economics, 79*(1), 42-53.

OECD (Organisation for Economic Co-operation and Development). Data. GDP per hour worked. https://data.oecd.org/lprdty/gdp-per-hour-worked.htm

Ramirez, M. D. (2006a). Does foreign direct investment enhance labor productivity growth in Chile? A cointegration analysis. *Eastern Economic Journal, 32*(2), 205-220.

Ramirez, M. D. (2006b). Is foreign direct investment beneficial for Mexico? An empirical analysis, 1960–2001. *World Development, 34*(5), 802-817.

Romer, P. (1986). Increasing returns and long-run growth. *Journal of Political Economy, 94*(5), 1002-1037.

Serfraz, A. (2018). Foreign direct investment inflows and labor productivity in Pakistan: A sector-wise panel cointegration analysis. *Asian Journal of Economics and Empirical Research, 5*(1), 1-18.

Sun, S. (2011). Foreign direct investment and technology spillovers in China's manufacturing sector. *Chinese Economy, 44*(2), 25-42.

Thuy, L. E. T. (2007). Does foreign direct investment have an impact on the growth in labor productivity of Vietnamese domestic firms? *The Research Institute of Economy, Trade and Industry. Discussion Paper Series 07-E-021*.

Tintin, C. (2012). Foreign direct investment, productivity spillovers and labor quality. *International Journal of Economics and Finance Studies, 4*(2), 57-66.

Tökes, L. (2019). The effect of foreign direct investment on firm labor productivity: Does the country of origin of the FDI matter? *Society and Economy, 41*(2), 227-243.

UNCTAD (United Nations Conference on Trade and Development) (2023). World investment report 2023, https://unctad.org/system/files/official-document/wir2023_en.pdf

Vinh, N. T. (2019). The impact of foreign direct investment, human capital on labor productivity in Vietnam. *International Journal of Economics and Finance, 11*(5), 97.

Vuksic, G. (2016). Effects of private ownership, trade, and foreign direct investment on labor productivity growth in transition economies: Evidence from the Croatian manufacturing industry. *Emerging Markets Finance and Trade, 52*(2), 322-335.

Wooster, R. B., & Diebel, D. S. (2010). Productivity spillovers from foreign direct investment in developing countries: A meta-regression analysis. *Review of Development Economics, 14*(3), 640-655.

Yasar, M., & Morrison Paul, C. J. (2007). International linkages and productivity at the plant level: Foreign direct investment, exports, imports and licensing. *Journal of International Economics, 71*(2), 373-388.

Yeaple, S. (2003). The complex integration strategies of multinationals and cross-country dependencies in the structure of foreign direct investment. *Journal of International Economics, 60*(2), 293-314.

How to cite this article

Sozuer, A., (2023). Foreign direct ınvestment and labor productivity: evidence from ındustrial firms in Türkiye. *Istanbul Management Journal*, 95, 12–21. http://doi.org/10.26650/imj.2023.95.1335148