Multinational firms as technology determinants in the new era developing countries: survey in Turkey

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Abstract

Multinational corporations (MNCs) are the creator of globalization. Selling their products on all over the world, using the world resources and spreading their production factors make them the main actor in this globalization process. Developing countries gain from the products of these international organizations and improve themselves accordingly. So in the era of new normal, where collaboration and strategic alliances in between world countries increase MNCs play their crucial role. As a developing country Turkey gain from this globalization process. Technological capability of the domestic firms in Turkey are enough to retain the spillover effects of the MNCs. In this study we evaluate Turkey also as a candidate state for European Union (EU) that have some regulations accordingly. The standards of EU has come to Turkey partially because of the Custom Union and also with the MNCs originated in European Economic Area (EEA). This study points out that as a developing country Turkey is technologically competent to have economic development by means of foreign direct investment (FDI) through MNCs. As a candidate state for EU, Ministry of Labour and Social Security (MOLSS) should regulate Turkish Labor Law in order to increase this positive spillover effects of the MNCs for the country. However this is also obligatory for improving our domestic labor structure. Productivity of labor is higher in foreign shared companies operating in Turkey. Also technological capability is higher for foreign partnership if we consider sales and export results of our survey implications.

Keywords: Foreign direct investment (FDI), Foreign ownership, Labor productivity, Technology spillover, Turkey

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1. Introduction

Multinational corporations (MNCs) create and diffuse technology in the world. The activities of MNCs create productivity spillovers in the host country. Domestic technology capability and the size of the company in the host country is also vital in this process. MNCs are relatively more research and development (R&D) intense according to the domestically owned companies operating in Turkey. These firms are dominant in the global technology diffusion
already because of their transactions. This attribute of the MNCs are accepted as a positive contribution for the host countries because of the development in the technology and products. Domestic firms adapt MNCs’ technologies through reverse engineering, imitation or R&D. Productivity spillovers in business economics have several mechanisms affecting domestic industries which are; the demonstration of new technologies and products, increasing the competition in the domestic market with the new products, transferring their labor force to domestic firms and creating vertical linkages in terms of input and output circles with the domestic companies. All these spillover effects may change depending on the industry and some specific characteristics of the domestic company. Size of the recipient company and also the R&D intensity in the host country industry changes the spillover effect of the MNCs in a positive or negative way. Ownership of the host company also changes the spillover effect of the MNCs. State ownership and learning effects in the industry has to be evaluated separately (Naranjo-Valencia et al., 2011).

Technology transfer costs for the host country. Cost of the transfer varies in between 20% and 60% of the total investment. Also imitation is not a costless and timeless process for the host companies. Cost of imitation is nearly half the cost of an innovation. Demonstration effect is a positive spillover for domestic companies. Competition effect is vice versa. MNCs pay higher wages to prevent the transfer of their skilled and knowledgeable labor as an uncosted source for the domestic companies. Wages paid by MNCs reflect the knowledge they transferred to their labor. Higher wages paid by MNCs and lower technological capability in the domestic firms prevent labor turnover from MNCs to the domestic firms. Also there are other obstacles for the labor to work for the domestic firms. Wage differential is huge for the developing countries. However, in oligopolistic market structure with the absence of technology transfer, both domestic market and MNCs lose because of the production costs. High communication costs between the headquarters of the MNCs and the production plant in the host country is a benefit for the domestic country. So they have to interact with the domestic firms. Entry of an MNC increases the demand for the intermediate good industry in the domestic country (Taymaz and Lenger, 2004; Yavuz, 2010).

2. Literature Review

MNCs are positive spillovers in terms of their competitive effect in the domestic market, but if they integrate to the domestic environment. In developed countries some studies show that labor productivity differences are related with foreign direct investment (FDI), capital intensity and scale of economics. Total factor productivity (TFP) of domestic plants are related with foreign firms’ employment level in the industry. Employment share in total employment is taken as a measure of foreign industrial activity. Some analysis also includes imports as positive spillovers for the host country. Technological spillovers of FDI are proposed to be more positively related with high technology industries than low technology industries. Negative spillover effect of MNCs in developed countries is on labor skills in some studies. State owned sector and joined with foreign capital gain positive spillovers from FDI, whereas it is opposite with the privately owned sector.

Industries with higher share of foreign activities seems to be more efficient than others. State owned enterprises gain from the competition effect, whereas private and collective owned enterprises gain from the demonstration effect of MNCs’ spillovers. Market oriented MNCs push competition effect, export oriented MNCs not. Productivity change is positively related with foreign entry; but this is less valid for less efficient enterprises. In summary technological capability of domestic firms is vital in positive spillovers. Another study shows that increase in foreign ownership has negative effects on wholly domestically owned firms; but positive effects on medium and small sized firms. Joint ventures seem to have positive spillovers, foreign equity perform better according to domestically owned enterprises (Taymaz and Lenger, 2004).

Globalization paves the way for the companies to be competitive in several markets. Entering new and big markets is simply internalization for the firms. Workplace activities increase the productivity of the firms and also improve the innovative practices. Empirical literature has not mentioned much about the pressures for internalization, innovation and human resource management (HRM) practices with a managerial aspect. An international firm is considered with the degree that it is owned by foreign interests or the amount of foreign shares in terms of its sales. But we have to consider the global pressures on the domestic firms in terms of their ownership or sales within the concept of the internalization. When the competitive environment pushes the labor force to be innovative in domestic countries, foreign ownership or sales don’t explain the globalization itself. The concept of internalization has to be understood
in an integrated way to solve the international mechanisms that do affect the companies’ competitive positions in the markets (Béret, P. et al., 2003).

International environment creates new opportunities and challenges for developed countries. Employing cheap labor force from developing countries, accessing to the larger markets and gaining the advantages of economies of scale are the results of the internationalization of the big companies in the world. Innovation and internalization come together for the big companies in the world (Walsworth and Verma, 2007; Latre, 2005).

According to the datas of the UNCTAD (United Nations Conference on Trade and Development) there were an estimated 77,000 transnational firms (TNCs) with some 770,000 foreign affiliates engaged in the international business in 2005. This means that MNCs are increasingly operating in multiple countries around the world. The EU Law requires MNCs to inform and consult the employees via European Works Councils (EWCs) or regulate according to a procedure about certain transnational corporate actions and build a channel between their decision making centre and their employees’ representatives from other locations which are affected by the decisions made such as mass layoffs, redeployment within the group and/or to its business partners or through measures such as retraining or using part-time work, some even include compulsory redundancies, avoiding plant closures (Özcüre et al., 2008).

3. Foreign Direct Investment (FDI)

In developing countries sustainable development, income growth and employment require FDI. Foreign firms are believed to gain productivity for the domestic firms. Most of the empirical studies show that absorptive capacity and technological proximity of the domestic firms to the MNCs’ capabilities determine the spillover effects of the MNCs in the host countries. There are also studies about vertical spillovers for transition countries. These studies denote that spillover effects are depending on the nature of the foreign owned firms. Mode of the entry of the foreign firms to the host country is also evaluated in the spillover affect process. Some studies show that greenfield entry affect domestic firms in negative direction, whereas acquisition type of entries in positive direction. Export oriented foreign firms impress domestic market more in terms of horizontal spillover effect than local market oriented foreign firms. Also domestic firms receive forward vertical spillovers from local market oriented foreign firms than export oriented ones. Firms that deploy labor intensive activities in the host countries do not generate any spillovers. High degree of competition created in the market affects the technology transfer to the host country.

Absorptive capacity of domestically owned firms increases the effects of the spillovers. FDI influences the economic development of the host country only in the case of sufficient absorptive capability of the advanced technologies is available in the host country. Absorptive capability has a positive relationship with the output growth in the transition economies. Significant technological capacity gap between foreign and domestic firms prevent productivity spillovers. As the gap enlarges effect gets smaller. Larger firms and the firms that serve to the local market absorbs spillovers more in transition economies. Labor intensive majority owned foreign investments do not create positive spillovers in the host country as their aim is to decrease their labor costs. Spillover effect depends on the majority foreign firms’ capital or labor intensity (Erdoğan, 2011).

4. Turkey

Taymaz and Lenger studied Turkish manufacturing industry in 1983-2000 time period with 3 digit 28 industries. In this period productivity of these industries had increased positively for the foreign firms. Labor productivity increased 216% in foreign firms, whereas 130% in domestic firms. Labor productivity in foreign sector is not stable as domestic sector either. MNCs had always more productivity according to their domestic counterparts. In terms of labor productivity, which is measured as real value added per employee, foreign firms overcame their domestic counterparts. Labor productivity of foreign firms had been 1.8 times higher than at the beginning of the time period, which is 2.5 at the end of the period. This gap shows positive productivity spillover effect for domestic companies and negative competition effect of spillovers. This gap may be also because of the size difference between huge MNCs and small domestic companies. As the size lessens this gap increases, on the other hand for the publicly owned enterprises this is vise versa. Namely publicly owned domestic companies’ labor productivity is higher than publicly owned foreign companies’ labor productivity. Foreign small industries had been 10 times more labor productive than domestic industries. So scale of economics does not explain FDI’s effect as productivity spillovers. Foreign medium
sized firms are 3 times more labor productive than domestic medium sized firms. Large scale of the publicly owned
domestic companies may explain the labor productivity to be higher than publicly owned foreign companies as in the
example of the petrochemical industry. Large domestic industries have relatively higher labor productivity according
to the small and medium sizes as demonstrating the domestic technological capability for positive spillover effect of
MNCs.

Hence production scale seems not to explain this productivity gap between foreign and domestic firms. Superior
technologies and better management of MNCs create demonstrative spillover effect in host country. Relatively limited
technologically capable domestic firms gain from demonstration effect of MNCs. When a comparison is illustrated in
between low, medium and high technology firms, foreign owned companies have twice more labor productivity than
domestic companies, however it varies according to the R&D intensity of the foreign owned companies.

If we observe the market share of MNCs in Turkey, this increased in this time period. Large foreign companies
reached 32%, whereas smalls 2% and mediums 8%. This huge share for large companies may be evaluated as an
horizontal spillover and also a negative competition effect on domestic companies. The inverse relation between
productivity and market share of various sizes foreign firms can be interpreted based on the number of firms.

On the other hand in terms of the technology scale; the market shares of medium and high tech foreign firms have
more shares according to the low tech foreign firms. This figure shows us the potential horizontal spillover effect for
medium and high tech industries. High tech industries are dominated by foreign firms with the ratio %44. Although
the productivity gap varies less according to the R&D intensity of firms, market shares varies more in between the
firms. This can be explained because of the quantity of the firms.

So various size and R&D intense industrial firms differ in terms of productivity and market share; but we can
summarize that if we compare the number of firms, the productivity of foreign firms are much more than the domestic
ones. Foreign firms have horizontal spillover effects on domestic firms, also we must consider the negative
competition effects of the foreign firms. Because of the large population of the domestic firms, foreign firms can not
dominate the whole market even their productivity and technological competence are higher. Domestic firms are
generally small and medium sized and in low and medium tech industries. Especially in small industries, small scale
firms dominate the market. Existence of the domestic firms shows that there are no positive or negative competition
effects of the foreign firms; however huge gap in terms of productivity signals positive spillovers for the future.
Learning effects of the domestic industry compensates negative spillover effects of MNCs in positive ways in the host
country (Taymaz and Lenger, 2004).

Social dialogue mechanisms have become one of the preconditions for EU accession for Turkey and a sort of
Europeanization of Turkish social policy and industrial relations is taking place in the course of preparing for
accession. In particular, the new Labour Law which has been accepted in 2003 has become to symbolize the process of
change in the institutional structure of the country and it is likely to be continued in other areas in the close future. The
EU- Turkey full membership negotiations process which had been started on 3rd October 2005; although, some
Turkish companies gained the position of Union-scale undertaking (during the EU and Turkey Custom Union which
has underwayed since 1st January 1996) and fell into the scope of the EU legislation.

The Custom Union have increased concentration on the undertakings and companies of both sides such as cross-
border mergers, takeovers and joint ventures and consequently the trans-nationalization of the undertakings and groups
of undertakings are increasing between companies operating in two or more EU member states and also in Turkey. For
example, banking and insurance companies operating in Turkey belonging to foreign-owned MNCs had a 63% capital
share at the end of 2008. The EU regulations related to the employee participation are important for Turkish
undertakings in two circumstances before the period of full membership to the EU: firstly, multinational based
companies in the EU countries are having a subsidiaries in Turkey and secondly, Turkish multinational companies are
having subsidiaries within the EU countries (Özeüre et al., 2009).

5. Hypotheses

5.1. Labor Productivity
Innovation is basically linked to the knowledge capacity in the firms. Innovation is the result of knowledge to discover and improve. As an intangible asset for the companies, knowledge enhances the innovation capacity of the firms. Human capital in the companies reflect the knowledge and talent existent in the labor force of the companies establishing the organization including know-how, capacity and creativity. The labor force which is motivated and capable constitutes the firm specific advantage of the firms in the competitive business environment. It is hard to imitate and find. On the other hand companies have to discover the capabilities of their employees to gain; because individuals have some reasons not to share their knowledge as losing ownership, privilege or superiority. So for the companies, managers should be aware of the innovative and incentive sides of their employees. Both employee capability and commitment are important for a comprehensive outcome (Santos-Rodrigues et al., 2010; Dorenbosch et al., 2005).

The integration of the strategic human resource management (SHRM) applications of the companies and their world-class status are positively related. The organizations that use a comprehensive SHRM policy have better performance and practice regarding to the quality management, innovation and the sustainability of their organization. SHRM coordinates and integrates the culture, organization, people and systems with the MNCs’ strategy and corporate goals. All these elements constitute the social architecture of the organization. That is difficult to imitate, so creates competitiveness for the companies. If companies don’t integrate their work force with the business strategy there occurs a missing link for them. However this is a complicated issue such that even firms have an integrated work force with their strategy, they should also constitute themselves towards the external environment especially for their customer orientation (Appleby and Mavin, 2000; Leede and Looise, 2005).

As economic integration in custom union and social relationship increasing between the European Union and Turkey in terms of labour force movement and population, despite, people in the EU still fear massive migration flows from Turkey, due to decreased fertility rates and longer life expectancy, the EU population is aging and leading to a likely fall in working population from 303 million to 297 million by 2020. Turkish population is forecasted to grow by 25% in the same period. A smaller labour force means less economic growth. So, there is a competition for highly skilled employees between big economic blocks such as NAFTA (North American Free Trade Agreement), the EU (European Union), ASEAN (Association of Southeast Asian Nations) and MERCOSUR (Southern Common Market) etc. In this circumstances labour force is also becoming more foreign all over the world. For instance, in small Luxembourg 61% of total labour force is foreign (although many of them are commuters from neighbouring countries), in Austria 11% labour force is foreign and in the EU average of total foreigners in total labour force calculated as 7% (Özcüre and Eryiğit, 2006; Lorenz and Valeyre, 2005).

Labor productivity is measured as real value per employee. Both foreign and domestic labor productivity is analyzed.

\[ H1: \text{Labor productivity of more foreign shared companies are higher than less foreign shared companies in Turkey in terms of research and development (R&D).} \]

5.2. Ownership

Companies are public or private, foreign share is evaluated.

\[ H2: \text{Foreign ownership increases the technological capability of the firms operating in Turkey.} \]

6. Methodology

6.1. Research Goal

We define foreign investment as 5% share of the company in Turkey. R&D intensity of the industries and sectors are important part of our research. Low, medium and high technology separation is made according to the OECD (Organization For Economic Cooperation and Development) classification. Also the occupation of the foreign companies in each industry and their market share is illustrated. FDI’s impact on Turkish business environment in terms of technological spillover effects of the MNCs is the main focus of our research. Technological capability of
domestic firms are enlarged by FDI in Turkey. This is our discussion. We are making a survey in Kocaeli Industrial Zone. This area represents 16% of total Turkish manufacturing industry. So this is a good sample for our research. We use survey questionnaire asking ownership, partnership structures of the companies, changes in their labor productivity and technological compatibility of these companies. We ask our questions to the headquarters, managers and R&D personnel managers in the companies. As our hypotheses suggest we are looking for the relationships between FDI, MNCs roles as productivity spillovers and increasing market share of these companies in domestic area. Foreign and domestically owned companies and joint ventures are compared and results are analyzed using statistical methods. We use an open ended questionnaire survey for technology determinants and a 5 likert-scale questionnaire to test EU-Turkey accession period spillover effects to test our hypotheses. We also make some in-dept interviews with the companies in the case of gaining information explicitly out of our survey questionnaires.

6.2. Sample and Data Collection

We have chosen 35 MNCs operating in Turkey from EWC Database. The database contains the name of 445 multinationals including 30 foreign investment and 5 Turkish MNCs and 181 of them already have had an EWC in the central management of the companies which varies employing at least thousands of employees to hundred thousands of employees within the EU and EEA (European Economic Area). An effort was made through searching the MNCs’ telephone numbers and web sites, and later we made telephone calls to MNCs’ HR department managers, interviews and e-mailings. We concluded the research by telephone to learn contacting e-mail address of the HR managers of MNCs and then we sent a questionnaire by e-mail to them. In all, 35 valid responses were received. Five Turkish companies’ HR managers could not send back a completed questionnaire due to none presence of the EWC. We have made interviews by face to face with the Turkish company, Arçelik HR manager and others by telephone and sent the questionnaire by email.

At statistical research, if the unit number is at least n=30, then the population mean is acceptable and considered to be normal. First of all, we asked companies’ HR managers if their company has any employee representative attending the central EWC meetings. If the answer was yes, then a questionnaire sent to them to discover the details as the country of origin, sector, consultation and information subjects which the EWC deals and name of the EWC and establishment year and an analysis of the actual functioning of EWC structures in Turkey. Our research includes another survey questionnaire composed mostly of open ended questions. Respondents are the HR managers of the companies which have a R&D department. Our criteria for the topic is that companies are big enough to have a HRM and R&D department.

In qualitative part of our study totally HR managers answered 63 questionnaires. For 37 questionnaires there are R&D departments, one of which is newly established and one of which is established in the foreign country. For this part of our study, 17 of the 37 companies who have R&D departments have totally or partially foreign ownership. So operating companies in Turkey are foreign investments with a high rate close to half.

6.3. Results

There is single-tier employee participation system in Turkey and union monopoly is occured at workplaces and undertakings which is not equal to EU two-tier employee participation system. It is the responsibility of the Ministry of Labour and Social Security (MOLSS) to develop the employee participation system which is similar to the EU. Employees participate in various joint boards and committees of enterprises through several legislated arrangements in Turkey. Participation of employees’ representatives in the annual vocation committee, the occupational health and safety committee occurs but, these rights are not progressed and not equal to the EU regulations. For increasing the participation rights and a smooth adoption of the EU information and consultation rights, it must be guaranteed by the Turkish Constitution, then Turkish Labour Law must be amended for the establishments which are employing at least 20 workers and undertakings which are employing at least 50 workers to setup works councils. These bodies also may be composed by the employer representatives as well as the employee representatives of the MNCs and the Turkish companies.
There is not any employee participation body or council established in Turkey at the workplace and company level by issuing Works Councils or at the EU level by issuing the EWCs in a hundred MNCs operating in Turkey. As we already know today, non-existence of employee participation in most private enterprises is likely to hinder the proper implementation of the EU directives at the enterprise level. The annual vocation committee, the occupational health and safety committee occurs in Turkish undertakings but, these rights are not equal to the EU regulations. For increasing the participation rights and a smooth adaptation of the EU information and consultation rights, the EU acquis must be guaranteed by the Turkish Constitution, then the Turkish Labour Law should be amended.

According to our first hypothesis which is “Labor productivity of more foreign shared companies are higher than less foreign shared companies in Turkey in terms of research and development (R&D)”, 17 companies of the 37 are totally or partially foreign owned in our sample. All these foreign companies have R&D departments. 13 company HR managers express that there is empowerment for R&D employees, which may be totally empowered, empowered with time or sometimes empowered. But most of them expressed this empowerment to be “certainly” and “exceedingly”. Empowerment is an important criteria for R&D personnel. This rate is nevertheless good for Turkish business environment. Question about R&D personnel’s satisfaction with their careers is answered as “Yes” with 10 respondents. Related with this question career mobility is evaluated as to be rare with again 10 respondents. Career satisfaction decreases career mobility in the companies. So our hypothesis is supported by our findings that foreign shared companies have high labor productivity in their R&D departments.

For our second hypothesis which is “Foreign ownership increases the technological capability of the firms operating in Turkey” our findings support. At the end of our questionnaire we have asked HR managers’ opinion about the effects of their R&D activities on total sales and exports. 15 respondents answered this question “Yes”. One respondent states that new products make the competition easier for them; one says R&D activities and total sales are positively correlated; one says R&D activities make the products & processes more qualified; most respondents use the term “absolutely supporting both sales and exports” and also one respondent points out that R&D personnel is working with the sales personnel. Working with sales personnel can be interpreted to be type of a job rotation and a successful practice for R&D personnel. HR managers believe that sales and exports are positively correlated with R&D activities in the companies operating in Turkey.

7. Conclusion

Europeanization and globalization of the markets created important challenges of MNCs operating under the conditions of the Custom Union between the EU and Turkey. Turkish companies are increasingly evolving on a European scale, weaving increasingly complex business and financial relationships with one another, restructuring their activities and relocating many activities to the regions with ‘cheap’ labour advantage. Nowadays, also, a few hundred giant MNCs becoming to control major shares of the Turkish companies and having some benefits. The negative effects of these company operations will be reduced through the establishment of EWCs and employee participation system.

As, Turkey aims to become a full member of the EU, all the preperations for this aim related to the Turkish economy must be focused on the current economic model and implications for a smooth powerful integration. The questions which are related to the company operating mechanisms are gaining significance. The EU corporate governance model also, considered as an opportunity and linked closely to the economic integration of Turkey to the EU. Employee participation will enhance also Turkish companies’ stability and competitiveness in global markets.

Both of our questionnaires show that as a developing country Turkey is open for the spillover effects of the MNCs. Especially foreign ownership increases this effect. Positive spillovers increase technological capability of the firms. In terms of labor force, MNCs increase the productivity. However our survey is about big companies. In further studies technologic spillover effects for SMEs should be evaluated in a developing country. Results indicate that in Turkey technological capability of the domestic big firms absorb positive spillovers from FDI. On the other hand HRM studies should be enlarged to study on how foreign employees behave in the Turkish environment. With SMEs and enlarged HRM studies this survey should be improved for the future.
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