Institutional and transaction cost influences on MNEs’ ownership strategies of their affiliates: Evidence from an emerging market

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Abstract

This paper examines the impact of institutional, and transaction cost specific variables on MNEs’ choice of equity ownership in their foreign affiliates. We consider the determinants of the choice of foreign investors between full ownership (setting up a wholly owned greenfield subsidiary or engaging in a full acquisition) and sharing ownership with a local firm (establishing a greenfield joint venture or making a partial acquisition). Drawing on both transaction cost and institutional theories, a number of hypotheses are developed. Based on a dataset of 6838 foreign affiliates in Turkey, the empirical analysis reveals that institutional variables are important in explaining the equity composition of foreign affiliates. Particularly important in determining equity ownership were found to be political risk, cultural distance, linguistic distance, agglomeration, location and the size of the affiliate. A distinguishing feature of the paper is that we examine the marginal effects of the independent variables in explaining ownership patterns of MNEs.

Keywords: Institutional theory; Transaction cost theory; FDI; Joint ventures; Wholly owned subsidiaries; Turkey

1. Introduction

The equity ownership level in FDI operations is often related to survival, performance and stability, yet the factors determining equity ownership level is relatively under-researched. While some of the earlier studies relied on a transaction cost approach to examine multinational enterprises’ (MNEs’) entry mode decision, it appears that institutional factors are as important as transaction cost variables. In addition, most prior research has examined the entry mode decision on the basis of equity ownership, with almost no emphasis placed on the empirical analysis of different ownership levels compared to wholly owned subsidiaries. This paper, based on a large dataset, provides empirical evidence on the impact of both institutional environment and transaction cost related variables on different equity ownership levels.

Studying the determinants of ownership preference of foreign investors in the Turkish context is justified in a number of ways. First, Turkey enjoys a very exclusive location at the crossroads between east and west, spanning both Europe and Asia. Its proximity to emerging markets in the Middle East and Central Asia creates unique business opportunities. Turkey is also the largest economy in Eastern Europe, the Balkans, and the Middle East. It is the European Union’s sixth biggest trading partner. Turkey was recently designated by the U.S. government as one of the Big Emerging Markets, characterized by high economic growth and a rapidly
growing population (Garten, 1996). Its economic growth is outstripping OECD averages, while trade volumes are also growing robustly reaching US$ 230 bn as of 2006. Finally, the Turkish context provides an interesting research setting characterized by its attempts to become both a more Western style market economy and its ongoing membership negotiations with EU, as being the first Muslim country ever bidding for EU membership.

Since the early 1980s Government policy in Turkey has aimed at developing a free market economy. The country’s traditional inward-oriented import-substitution policies have been replaced with an export-oriented development strategy. Commensurate with this policy approach, Turkey has recorded a substantial increase in FDI. This is a result of the determined implementation of a sound economic program. Accompanying productivity gains are convincingly high enough to sustain a higher potential growth rate in the next decade. The pro-business approach that prevails is based on the fact that business opportunities alone are not good enough unless they are accessible to entrepreneurs. Thus, a comprehensive reform program to improve the business environment has been adopted and implemented. Early results, such as simplified procedures for setting up businesses and new FDI legislation, are strong indicators of the change in the way business is done.

In terms of the total value of FDI inflows, in 2005 alone Turkey was expected to have attracted almost as much FDI as in the previous 12 years combined (Financial Times, 2005). Although the full impact of the new stage triggered by the start of Turkey’s membership negotiations with the EU still remains to be seen, recent evidence suggests a greater likelihood of even more FDI entries through acquisitions, privatization or expansion of existing MNEs’ operations. The surge of acquisitions over the last decade has dramatically increased MNEs’ share of the top 500 manufacturing companies in Turkey, from 21% in 1990 to 33% in 2003 (Turkan, 2005). Since the start of the accession negotiations between Turkey and the EU, total FDI entries have increased dramatically. FDI inflows between 2001 and 2004 were US$ 9.72 bn, with the total value of FDI inflows jumping to US$ 15.8 bn in the first ten months of 2006. The IIF (Institute of International Finance) projected FDI inflows to Turkey to reach US$ 22.5 bn in 2007, up marginally from US$ 22 bn in 2006 (IIF, 2007). Mergers and acquisition activities in the banking sector and foreign acquisitions of local companies are expected to strengthen FDI inflows. Foreign capital has flowed into Turkey from countries throughout the world, but the majority of it has come from Europe and the USA. In terms of the distribution of authorized FDI by country of origin, foreign investment in Turkey is dominated by European countries (72%) by value of FDI followed by the USA (12%), with the remainder mainly shared by the countries from the Far East (7%) and the Middle East (3%) (GDFI, 2005).

Given the emerging nature of the market and the transitional characteristics of the institutional environment, the Turkish context provides a good case to test a number of new dimensions alongside previously tested variables. In particular, this study aims to integrate new institutional dimensions such as linguistic distance and transparency differences between home and host countries. Essentially, the focus of the study is on the choice of foreign investors between full ownership (setting up a wholly owned greenfield subsidiary or engaging in a full acquisition) and sharing ownership with a local firm (establishing a greenfield joint venture or making a partial acquisition). We assign JVs into three categories in terms of foreign equity stake: Minority JV, co-ownership JV and majority JV. As suggested by previous researchers (Franko, 1989; Contractor, 1990) the equity share distribution is not exactly on a percentage continuum. For instance, there are very different strategic implications between holding 23% and 24% equity ownership, and holding 49% and 50%; or between holding 50% and 51% equity ownership, and holding 49% and 50% (Pan, 1996).

Hence, four separate comparisons for the ownership strategies of foreign investors are made: (1) comparing a minority JV with a WOS; (2) comparing a co-ownership JV (50–50%) with a WOS; (3) comparing a majority JV with a WOS; (4) comparing the full set of JVs regardless of the share of foreign equity stake with a WOS. This enhances the robustness of the analysis by providing a better understanding of the variables that impact the ownership strategies of foreign investors in Turkey.

The paper is organized as follows. The following section reviews the previous literature on foreign investors’ ownership strategies for their affiliates and develops the hypotheses of the study. Section 3 sets out the research methods. Results and discussion are in Section 4. Conclusions are in Section 5.

2. Literature review and hypotheses

Transaction cost theory proposes a variety of factors, including both firm-related and host country-related that may influence the benefits and costs associated with alternative establishment modes. Some of the firm-related factors include the size of the parent firm (Caves & Mehra, 1986; Kogut & Singh, 1988), multinational

Recently, institutional theory has emerged as an alternative approach to explain the ownership-based entry mode strategies of foreign investors in host country markets (Brouthers, 2002; Davis, Desai, & Francis, 2000; Delios & Beamish, 1999; Lu, 2002; Meyer, 2001). Instead of focusing on the technical environments of individual transactions as suggested by transaction cost theory, institutional theory requires an investigation of different broader institutional contexts across countries and their impact on ownership strategies of MNEs (Meyer, 2001). Since institutions provide the structure in which transactions occur, institutional theory, as suggested by North (1990) must be integrated with transaction cost theory. Hence, some scholars have recently begun extending transaction cost-based entry mode theory by incorporating institutional and cultural context variables as well as transaction cost variables (Demirbug & Weir, 2006; Tatoglu, Glaister & Erdal, 2003; Brouthers, 2002; Brouthers & Brouthers, 2000; Delios & Beamish, 1999). This approach draws its theoretical logic from the argument that different environments are endowed with different levels of resources and institutions of varying effectiveness. In emerging market economies, institutions and institutional factors are particularly important because institutional immaturity raises transaction costs and risk level (Child, Chung, & Davies, 2003; Meyer, 2001, 2004; Meyer & Peng, 2005; Uhlenbruck, 2004). Host country related factors and institutions have been operationalized for various purposes and found to have a significant impact on the survival of joint ventures (Dhanaraj & Beamish, 2004).

While institutions provide a less tangible form of support to organizations, their efficiency would facilitate a better business environment (facilitating transactions) for the business units and organizations alike. Host country institutions can be broadly classified as political, legal and societal institutions. Scott (1995) classifies three pillars of the institutional environment as regulative, normative and cognitive. The regulative pillar refers to rules and laws that exist in a society to provide stability, transparency and order. The normative pillar is more related to the social values domain, which would include dimensions such as culture, language and norms of the society. This pillar may be difficult for an outsider to interpret. The cognitive pillar represents cognitive structures in society that are taken for granted. Institutional theorists argue that organizations seek cognitive legitimacy in society, therefore firms in the same country or sector may try to achieve this cognitive legitimacy by imitating each other (Di Maggio & Powell, 1983; Martinez & Dacin, 1999; Scott, 1995).

Coercive isomorphism is a concept developed by institutional theorists which ‘results from both formal and informal pressures exerted on organizations by other organizations upon which they are dependent and by cultural expectations in the society within which organizations function’ (Di Maggio & Powell, 1983: 150). As Di Maggio and Powell (1983) further argue, such pressures may be felt as force, persuasion or as invitations to join in collusion. Informal pressures may be exercised more in a relatively non-transparent political and regulative environment. Transparency, or lack thereof, may be used as a proxy for institutional difference between home and host countries.

The host country institutional environment is also known to influence entry mode decisions of MNEs (Brouthers, 2002). Brouthers (2002) further argues that institutional variables extend transaction costs theory by examining the ability of a firm to expand or enhance its competitive advantage. Child et al. (2003: 243) refer to natural selection and argue that ‘firms operating under more favorable external circumstances have a better chance of prospering’. Peng (2001) and Makino, Isobe, & Chan (2004) have both stressed the importance of economic, political, social, cultural and institutional differences across countries and asserted that ‘countries do matter’ in explaining the variation in behavior and performance of MNEs.

Transaction costs and institutional environment theories of FDI entry modes differ in terms of the logic underlying each approach. While the transaction cost theory focuses on efficiency, the institutional theory uses legitimacy as its primary criterion. Although some conceptualizations have attempted to integrate both theories (Williamson, 1991), these efforts have remained limited due to the integration of only the regulative environment, while some of the normative and cognitive dimensions of institutional theory have
not been used by transaction cost theorists (Yiu & Makino, 2002). The following subsections detail the rationale for the hypothesized effects of the institutional and transaction cost influences on foreign investors’ ownership strategies of their affiliates in Turkey. For the purpose of establishing relationships among transaction costs, institutional level variables and foreign ownership decisions we have developed a conceptual framework as shown in Fig. 1.

This framework is based on the premise that foreign equity ownership decisions in an emerging market will be affected by transaction cost considerations, institutional considerations and firm/industry level variables. As Wright, Filatotchev, Hoskisson, and Peng (2005) argue emerging economies provide a new context in which to understand relative strengths and weaknesses of these different perspectives. As there are considerable variations between emerging market economies themselves in terms of institutional development (Peng, 2003; Peng, 2006), a multi-perspective approach appears to be more appropriate to capture relationships between different perspectives and foreign ownership decisions.

2.1. Institutional variables

2.1.1. Political constraints

Political hazards or risk constitutes an important dimension of the institutional environment, since MNEs mostly face a new political system and set of regulations in a new location. The coercive power of the state forces firms to behave in the way that the new regulative and political environment requires. The state has the power to take measures from minor interventions to outright expropriation. Arguably the actual or perceived political constraints are indicators of the coercive role of the state in MNEs’ decisions. In order to manage political hazard as a consequence of a new institutional environment, and to avoid the risk of intervention or expropriation, MNEs operating in environments with high political constraints tend to choose lower equity stakes in their foreign equity ventures (Henisz, 2000). Such alliances, although they may create complexities in R&D intensive sectors, seem to mitigate the pressure on MNEs.

Empirical evidence supports the contention that the higher the political risk the lower will be equity ownership of MNEs. Miller (1992, 1993) and Kobrin (1979) emphasized the importance of the political risk and uncertainties dimension on MNEs’ operations and performance. Brouthers et al. (2000) found a relationship between political uncertainties and MNEs’ entry mode decision and performance. Ahmad et al. (2002) also noted that when perceived political risk was high, MNEs tend to use low commitment entry modes. Yiu and Makino (2002) reported that in restrictive regulatory environments, MNEs choose a joint venture over a wholly owned subsidiary. Time is also another factor to consider. Prior research suggests that foreign investors view political stability from the longer-term perspective, rather than recently established stability (Bevan, Estrin, & Meyer, 2004; Henisz, 2000; Murtha & Lenway, 1994; Root & Ahmed, 1979: 758). The political constraints index (POLCON, 2005) developed by Henisz (2000, 2001, 2004) takes the time dimension into account and recognizes that the regulatory restrictions and political constraints change over time. Wright et al. (2005) argue that institutional changes in transition economies affect MNEs’ entry mode decisions. Thus, we hypothesize that:

**H1.** In an environment with high political constraints, MNEs will select a joint venture or lower equity mode compared to a wholly owned subsidiary.
2.1.2. Corruption

Corruption is a phenomenon that has received attention by social scientists in general but has been rarely considered in entry mode decisions of MNEs. Perceived corruption levels between home and host countries, however, can be treated in the same way as cultural distance. It is not necessarily the costs, *per se*, of corruption that is the primary factor. Rather, it is the impact of the uncertainty provoked by the seeming ‘arbitrariness’ of the interactions around corruption activities (Rodriguez, Uhlenbruck, & Eden, 2005; Tanzi, 1998; Wei, 2000), secrecy (Shleifer & Vishny, 1993) as well as the difference between corruption levels in the home and host countries (Habib & Zurawicki, 2002). An additional difficulty lies in predicting levels of corruption within the host country, as well as from country to country, which exacerbates the uncertainty. While corruption in itself is a multifaceted concept and can be used as an all inclusive variable, we will use only the bribery aspect of corruption.

The evidence on the FDI flow and level of corruption in host countries is equivocal. Habib and Zurawicki (2001, 2002) used transparency distance (adapted from Transparency International) and found that corruption did not deter FDI in absolute terms (i.e., China, Brazil, Thailand, and Mexico enjoy high FDI flows despite their high corruption image), because MNEs developed instruments to manage the relationship with host institutions. They further argued that MNEs’ exposure to corruption in their own home environment provides a learning experience, preparing the individual companies to handle similar practices in the host country environment (Habib & Zurawicki, 2002: 295). In contrast, Wei (2000) found that corruption discourages foreign direct investment, explaining that ‘corruption, unlike tax, is not transparent, not pre-announced and carries a much poorer enforcement of an agreement between a briber and a bribee’ (Wei, 2000: 1). On the basis of this discussion we expect that:

**H2.** The greater the corruption differences between the home and host countries the more likely that foreign investor will choose a joint venture or a lower equity mode over a wholly owned subsidiary.

2.1.3. Cultural distance

Differences in national cultures are most widely acknowledged in international business literature. National culture (values) influences not only how people behave, but also their attitude towards risk, communication, authority or delegation. Boyacigiller (1990) argues that cultural differences will increase the cost of information flows between parties and hence can be interpreted as a transaction cost variable. The institutional theory also treats the national culture as an important factor in market entry decisions. The normative component of institutional theory encapsulates culture’s definition. As Kostova (1999) points out, the normative component of the institutional environment focuses on normative systems, which include values and norms held by individuals in a given country. Kostova (1999: 315) further argues that ‘the greater the difference between the normative profiles of the home country and the recipient country, the greater the likelihood that there will be a misfit in transferred practice and the recipient environment’.

Several studies provide evidence for the multiplicity of differences between cultures. The concept of cultural distance is well known since the work of Hofstede (1980) and widely used for predicting the entry mode of MNEs (Kogut & Singh, 1988). The cultural distance argument also partly captures institutional differences between the home and the host country (Xu, Pan, & Beamish, 2004). This discussion leads to the following hypothesis.

**H3.** The greater the cultural distance between home and host country, the more likely that the foreign investor chooses a joint venture or a lower equity mode over a wholly owned subsidiary.

2.1.4. Linguistic distance

The relationship between management thought and language, and the importance of language in cross-cultural communications have been widely recognized (Agar, 1994; Hofstede, 1980; Triandis, 1995; West & Graham, 2004). As compared to cultural distance, linguistic distance has been rarely studied in entry mode research. In other areas of the social sciences, however, there has been some research on the influence of linguistic distance on individual decisions. In migration studies, for instance, linguistic distance has been used to analyze the choice of destination among immigrants. There also seems to be a relationship between linguistic distance and language adapted in destination countries of immigrants.

Although linguistic difference has been included in a number of theoretical models of internationalization and entry mode studies, with the exception of two studies (Dow & Karunaratna, 2006; West & Graham, 2004) the measure itself has not been operationalized. This paucity of empirical work appears to be associated with the complexity of measuring the construct and the lack of existing scales (Dow & Karunaratna, 2006). We
develop our argument on the premise that linguistic distance may not be captured by a cultural distance measure, because there may be only moderate correlation between the linguistic distance dimensions of cultural distance (West & Graham, 2004). In a multi-party partnership, linguistic differences will be important not only for cross-cultural communication and day-to-day management reasons, (Ronen & Shenkar, 1985) but also because it may reflect executives’ strategic approach to foreign operations and perception of risk and uncertainty. Thus, linguistic distance is an important but neglected component of psychic distance that is likely to have an impact on transaction costs.

Welch, Welch, and Marschan-Piekkari (2001) argue that there is a tendency for firms to engage in equity venture formations in those countries with the same language group at the initial stage of international expansion. We extend this argument to ownership structure choice of MNEs. Greater linguistic distance between home and host countries would influence the entry mode decision by influencing risk perceptions of executives. Therefore we hypothesize that:

**H4.** The greater the linguistic distance between home and host country, the more likely that the foreign investor chooses a joint venture or a lower equity mode over a wholly owned subsidiary.

### 2.2. Transaction cost-related variables

**2.2.1. FDI concentration**

When used as a proxy for industry attractiveness, the ratio of foreign firms to total firms in a particular sector is envisaged to be an important factor in MNEs’ ownership decision. Luo (1998) argues that when industry structure of a host country is imperfect, FDI will flow in as a direct response. In oligopolistic industries, MNEs enjoy market benefits of entry barriers. Lecraw (1983) found a significant relationship between industrial concentration and capital intensity in MNEs’ operations in developing countries. Contractor (1990) used an alternative measure of market or investment intensity for US joint ventures abroad. Based on the arguments of internalization theory, he argues that the greater the perceived importance of a particular sector by foreign investors, the more they will seek to internalize and not to share the control through a joint venture arrangement. A high level of existing FDI could also be interpreted as an indicator of less uncertainty and availability of support industries and human capital (Erramilli & D’Souza, 1995). Based on these arguments, we hypothesize that:

**H5.** The greater the FDI concentration in an industry, the more likely that a foreign investor chooses a wholly owned subsidiary over a joint venture or a lower equity mode.

**2.2.2. R&D intensity**

One way of achieving product differentiation is by investing in R&D. In order to reduce unwanted dissemination of proprietary knowledge, MNEs tend to prefer high equity ownerships in R&D intensive industries (Belderbos, 2002; Gomes-Casseres, 1989; Hennart & Park, 1992). Transaction cost theorists use R&D intensity as a proxy for asset specificity. Empirical evidence shows that there is a positive relationship between asset specificity and the propensity to have a controlling ownership in foreign subsidiaries (Belderbos, 2002; Chen & Hennart, 2004). Using the transaction costs logic and the possibility of information leakage leads us to hypothesize that:

**H6.** A foreign investor is more likely to choose a wholly owned subsidiary over a joint venture or a lower equity mode in R&D intensive industries.

**2.2.3. Advertising intensity of the target industry**

Advertising intensity of an industry is also an important factor in entry mode decisions. In an industry that requires high advertising (e.g., consumer products) MNEs will need to establish both legitimacy and effective communication with customers. In emerging market economies, local partners may play a constructive role and provide complementary resources such as market knowledge and in some cases an established distribution network. In acquisition type entries in advertising intensive industries, the target firm may possess intangible marketing assets which may require close co-operation with local partners. The counter argument to this logic is that advertising intensity is an indication of asset specificity; therefore, firms will safeguard their asset specificity with a higher equity stake in their subsidiaries. Advertising intensity may also serve as an entry barrier. The evidence appears to be sketchy. Advertising intensity was found to be a significant entry barrier within the consumer goods industries, but not for the producer goods industries (Orr, 1974). Therefore we hypothesize that:

**H7.** A foreign investor is more likely to choose a wholly owned subsidiary over a joint venture or a lower equity mode in industries with high advertising intensity.
2.2.4. Location of affiliate

The condition of the infrastructure and the availability of related and support services of a geographical location are seriously considered by foreign investors. The Marmara region, which is considered to be the prime location for foreign investment in Turkey, accounts for more than 60% of all foreign equity venture formations in the country. Foreign investors tend to perceive the Marmara region as being highly favorable, having relatively lower general risk exposure than that of the inland areas. Pan (1996) notes that the level of risk in the vertical integration of operations for firms located in such areas is much lower than for firms that do not possess the same favorable investment environments. This discussion leads to the following hypothesis.

**H8.** A foreign investor is more likely to choose a wholly owned subsidiary over a joint venture or a lower equity mode when the affiliate is located in the developed regions of the host country.

2.2.5. Capital size of affiliate

Launching a sizeable operation abroad demands a high resource commitment in the form of substantial infusions of capital and managerial resources. The establishment of a high resource/high control operation entails substantial internal organization and bureaucratic costs, including investment in administrative, legal, and operating infrastructures (Davidson & McFetridge, 1985). High switching costs stemming from the high overhead of such large-scale investments may also diminish the firm’s ability to shift to another operation (Erramilli & Rao, 1993). Prior to embarking on a large-scale resource commitment foreign investors must carefully consider the potential costs and returns of such investment, as the level of risk exposure is directly associated with the total investment in non-redeployable assets. Prior research suggests that foreign investors are more likely to choose lower equity ownership than a majority or full ownership of their subsidiaries when the capital size of the operation is high (Gatignon & Anderson, 1988; Shan, 1991). Empirical evidence, however, is mixed. The findings of Hu and Chen (1993), Zhao and Zhu (1998) and Mutinelli and Piscitello (1998) indicate that foreign investors are likely to choose a full ownership or a higher equity share in their affiliates. Given that the Turkish market still involves a high degree of uncertainty, we expect that:

**H9.** A foreign investor is more likely to choose a joint venture or a lower equity mode over a wholly owned subsidiary as the capital size of the affiliate increases.

3. Research methods

3.1. Data

All foreign equity ventures operating in Turkey are recorded by a government agency, the General Directorate of Foreign Investment (GDFI). The GDFI acts as a one-stop agency for implementing the regulations concerning foreign investment. It advises and assists foreign investors, receives and processes investment applications, and reviews and approves license, royalty and management contracts. The database of GDFI consists of all foreign equity investments in Turkey and as of 2003 includes 6838 FEVs. This database incorporates data from national authorities and other relevant sources and provides information about the country of origin, mode of entry, the sector of operation, amount of capital and its distribution among foreign and local partners, total number and composition of foreign and local partners, entry date and location of the investment.

This study uses the 10% and 90% cut-off points to capture the alternative ownership structures. The investments with foreign ownership of less than 10% are considered to be portfolio investments and are excluded from the database. A venture is defined as a JV when foreign equity ownership ranges from 10% to 90%, while a venture with foreign equity shareholding of over 90% is considered to be a WOS. This range is consistent with the definition of a JV used by the U.S. Department of Commerce. Park and Ungson (1997) and Hladik (1985) also followed the same definitions. In this study JVs are further classified into three categories: minority foreign-owned (10–49%), co-ownership (50–50%), and majority foreign-owned (51–90%). The average foreign equity ownership is 74%. The distribution of ownership is as follows: Minority foreign-owned, 18.4%; co-ownership, 12.5%; majority foreign-owned, 21.2%; full ownership 47.9%. The average age of affiliate is 8.5 years. The distribution of the data set in terms of the sector of operation is as follows: agriculture and mining, 4.0%; manufacturing, 24.0%; services 72%. Within the manufacturing sector, chemicals and related industries constitute 5.2%, ready made garments and textile, 4.5%, electrical and electronics 3.0%, food and drink, 3.1%, automotive and related 2.3% and other manufacturing industries, 5.9% of all FDI firms. Within the services sector, trade comprises 39.8%, hotels and tourist resorts 5.4%, construction 3.0% transportation 2.3% banking and insurance 1.5%, health 0.8%, and other services 20.0% of all FDI firms.
The characteristics of the sample firms on the basis of the key dimensions of the data source are summarized in Table 1.

### 3.2. Operationalization of variables

#### 3.2.1. Dependent variable

The equity structure of foreign subsidiaries (minority JV, equal JV, majority JV, and WOS) was treated as the dependent variable. We used the 10% and 90% cut-off points to capture the alternative ownership structures. Although 5% and 95% cut-off points were also tested, no significant differences were detected; therefore we decided to use 10% and 90% cut-off points.

### 3.2.2. Independent variables

The political constraints index (POLCON) developed by Henisz (2000) measures the feasibility of a change in policy given the structure of a nation’s political institutions (the number of veto points) and the preference of actors that inhabit them (the partisan alignments of various veto points and the heterogeneity or homogeneity of the preferences within each branch). The POLCON (2005) database covers almost all major nations and is calculated for virtually all countries for the post-war period (1960–2004), which fits well with the database used for this study. Scores range from 0, which indicates the executive has political discretion and could change existing policies at any point in time, to 1, which indicates that a change of existing policies is totally infeasible. As the value of the index approaches 0, then an increase is expected in the level of political constraints for a given host country market.

The corruption index was computed using Transparency International’s corruption index to identify transparency distance between home and host countries (as suggested by Habib & Zurawicki, 2001, 2002). Then the distances between home and host countries were multiplied by the sectoral bribery index. The average sectoral bribery index was directly adapted from the World Wide Web edition of Transparency International’s (TI, 2001, 2004) bribe payers’ index.

Cultural distance (CULT-DIST) is measured by using the methodology developed by Kogut and Singh (1988) based on Hofstede’s (1980) measures of four dimensions of national culture: power distance, uncertainty avoidance, masculinity/femininity and individualism. Countries with small values of cultural distance are culturally similar to Turkey, with larger values signifying increasing dissimilarity.

There seems to be no developed measure of linguistic distance (LINGDIST) between world languages in the international business or management literature. Researchers have mainly used dummy variables for a common language (Arora & Fosfuri, 2000; Davidson & McFetridge, 1985; Srivastava & Green, 1986). Recently there has been an attempt to operationalize the concept to explore the relationship between cultural distance dimensions and distance between languages (West & Graham, 2004; Dow & Karunaratna, 2006). Chen, Sokal, & Ruhlen (1995) developed a measure of linguistic distances between 130 localities around the world. This study follows the same path in operationalizing the linguistic distance by adopting the dendogram developed by Chen et al. (1995) who constructed this dendogram by using the

### Table 1

**Characteristics of the sample**

<table>
<thead>
<tr>
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<th>No</th>
<th>%</th>
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<td><strong>Foreign equity shareholding</strong></td>
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<tr>
<td>Minority JV</td>
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<td>Co-ownership</td>
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<td>Majority JV</td>
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<td><strong>Broad sector of operation</strong></td>
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<td>Service</td>
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<td>2000 and later</td>
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<td><strong>Location of investment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marmara region</td>
<td>4553</td>
<td>66.6</td>
</tr>
<tr>
<td>Others</td>
<td>2285</td>
<td>33.4</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1-small</td>
<td>4846</td>
<td>70.8</td>
</tr>
<tr>
<td>C2-medium</td>
<td>1134</td>
<td>16.6</td>
</tr>
<tr>
<td>C3-large</td>
<td>861</td>
<td>12.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6838</td>
<td>100.0</td>
</tr>
</tbody>
</table>
UPMGA (unweighted pair-group method using arithmetic averages) method based on unequal branch length linguistic distances. Chen et al. (1995) estimated linguistic distances for the populations both within each phylum (language family) and among the total of 18 phyla. These distances are subjective estimates of their affinities based on available linguistic evidence. The distance between languages ranges from 1 to 60. A value of 1 or 2 indicates similar languages; a distance of 10 is the upper limit within one phylum. The shortest distance between two different phyla is set at 15, and 60 is the maximum divergence any two phyla in the Chen et al. (1995) matrix. The dendogram and the matrix used in creating this dendogram includes 130 localities around the world, which covers all languages used by investors in the database used for this study. The raw data and the matrix developed by using the raw data were kindly provided by Chen et al. (1995) for this study. For multilingual countries, as suggested by West and Graham (2004), weighted averages based on percentages and mixes of languages were calculated and used. The World Wide Web version of Grimes (1992) catalog of human languages was used to identify the languages or languages of a particular country. Turkish was used as the focal language in calculating linguistic distance between countries.

AGGLOMER is the number of FDI firms from the same country in the sector of operations. This is used as a proxy measure for FDI concentration from a country in an industry.

Industry R&D intensity (R&DINTENS) was calculated by following the methodology used by Chen and Hennart (2004). As suggested by Chen and Hennart (2005), the ratio of R&D expenditures to sales at the four digit Standard Industrial Classification (SIC) were created by using data in Turkey’s Statistical Yearbook 2005, in which data dates back to as far as 2001 (p. 380). In a comparative study, Martins and Price (2004) use the same method in creating R&D intensity for industrial sectors.

Industrial advertising intensity (ADINTENS) was calculated by using data from Marketing Turkiye (2000) and Turkey’s Statistical Yearbook (SIS, 2004). The ratios created for the industrial sectors \( A_i \) (Average advertising expenditures/Average Industry Sales; \( A = A_1, \ldots, A_i \text{ industries} \) were then compared with the UK Advertising Statistics Yearbook (2001, 2003, 2005) on a sector basis and found to be sufficiently consistent to include these ratios in the models presented in the following section.

Location (LOCATION) is a dummy variable that is coded 1 if the affiliate is located in the Marmara region and 0 otherwise. The subsidiaries located outside the Marmara region are mainly concentrated in Central Anatolia, Aegean and Mediterranean regions.

Capital size of affiliate (LN_SIZE) is measured using the logarithm of the amount of total investment in US dollars. Data on capital size of subsidiaries have been converted into US dollars using the average rate of exchange for each year as reported by the Central Bank of Turkey. The logarithmic transformation is generally used to normalize the size variable, which might otherwise be badly skewed.

### 3.3. Control variables

#### 3.3.1. Natural resource intensity of target industry

Foreign investors may opt for equity sharing in order to gain access to natural resources that are controlled locally (Gomes-Casseres, 1989). This is commonly found in natural resource industries (i.e. food and beverages, tobacco, and minerals) where the local market for these resources is not competitive. Hennart and Larimo (1998) have also argued that such industries are often politically sensitive and a local partner can provide the foreign investor help with securing permits. As a result, in such industries foreign investors are more likely to form JVs than WOSs and prefer lower equity ownership in JVs compared to majority ownership.

Natural resource intensity of target industry (RESOURCE) is a dummy variable given the value of 1 if the affiliate is in a resource-intensive industry and 0 otherwise. Following Gomes-Casseres (1989) resource-intensive industries were identified as food, beverages, textiles, leather, rubber, tobacco, paper, petroleum, natural gas and mining.

#### 3.3.2. Triad versus non-triad countries

Ohmae (1985) coined the term TRIAD, encompassing the USA, EU and Japan. In a recent work, Rugman (2005) extended the concept with a new definition by defining TRIAD as NAFTA, the expanded EU and Asia. This definition has been criticized for including countries which have very little in common (Aharoni, 2006). Our definition of the TRIAD includes the EU countries, the USA, Japan and also other countries of Western Europe including Norway, Lichtenstein and Switzerland and partnerships between companies from these countries. Non-Triad countries consist of other OECD countries (South Korea, Australia, Mexico, Canada), non-EU Central and Eastern European countries (Bulgaria, Romania, Macedonia, Albania) Russia, Ukraine, Central Asian Republics, China, India, Taiwan, Malaysia, Islamic countries of Asia, Middle
East and North Africa, and others including mixed partnerships within these groups. We incorporate the TRIAD as a dimension in our model because the member countries have common dimensions of low growth, many large size firms and a sizeable number of ‘engineered commodities’ based on innovation and capital-intensive processes. TRIAD is a dichotomous variable where the value of 1 denotes triad nations and 0 otherwise. A similar taxonomy was also used by Glaister, Husam, & Buckley (1998) and Marangozov (2005).

The correlation matrix of the independent variables in the study is shown Table 2. The pairwise correlations do not seem to present serious multicollinearity problems for the multivariate analysis, as none of the variables have correlation coefficients above 0.60. Wetherill (1986) recommends an analysis of VIF when three or more variables are involved. In the near dependency the correlations between relevant pairs of variables need not be large (Wetherill, 1986). This is where VIF may play an important role and should not be larger than ten. Since the highest VIF value for independent variables was significantly lower than this cut-off point, the multicollinearity in the explanatory variables for the data set does not seem to be a problem.

3.4. Model specification

The entry mode choice of JV or WOS and alternatives within JVs is modeled as a qualitative choice problem. Four entry modes were considered, which include WOS, majority joint venture, co-ownership joint venture and minority joint venture. The nature of the dependent variables allowed us to use the multinomial logit approach to estimate the effect of the explanatory variables on the probability that each of the four equity ownership is chosen. The multinomial logit analysis allows the explanatory variables to affect different odds of choosing one alternative relative to the other. The probability that the $i$th firm will choose the $j$th entry mode ($P_{ij}$) is given in the following model:

$$P_{ij} = Pr(R_{ij} > R_{ik}), \quad \text{for } k \neq j, \quad j = 0, 1, 2, 3$$

where $R_{ij}$ is the maximum utility for firm $i$ if the firm chooses the entry mode $j$:

$$P_{ij} = \frac{\exp(x_{ij}\beta_j)}{\sum \exp(x_{ij}\beta_j)},$$

where $P_{ij}$ is the probability of choosing alternative $j$ and $\beta_j$ is the vector of coefficients to the independent variables, and $x$ is the vector of independent variables. The parameters ($\beta$'s) are estimated by maximizing a log likelihood function.

When the multinomial logit model is estimated, one option must be used as base mode. Because once $j - 1$ alternative probabilities are known, the $j$th is determined (Klein, Frazier, & Roth, 1990: 202). Therefore, we estimated three ($j - 1 = 3$) different logit equations where we use wholly owned subsidiaries (WOS) as the basis for comparison.

The second section of our analyses focuses on marginal changes created by independent variables. Marginal effects are partial derivatives of the probabilities with respect to the explanatory variables evaluated at their sample means. They are interpreted as the change in probability of selecting a particular ownership mode as one unit change in the explanatory variable occurs. In other words, it is the net effect when all other variables are held at their means. Having “k” ownership options, (WOS is denoted as the base) we can

<table>
<thead>
<tr>
<th>Variable name</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLCON</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORRUPT</td>
<td>-0.12</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CULTDIST</td>
<td>-0.05</td>
<td>0.57*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LINGDIST</td>
<td>-0.03</td>
<td>0.54</td>
<td>0.43</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGGLOMER</td>
<td>0.04</td>
<td>-0.21*</td>
<td>-0.19*</td>
<td>-0.21*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;DINTS</td>
<td>-0.01</td>
<td>0.05</td>
<td>0.03</td>
<td>0.02</td>
<td>-0.06</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADVINTS</td>
<td>-0.07</td>
<td>0.05</td>
<td>-0.02</td>
<td>-0.04</td>
<td>0.33*</td>
<td>0.16*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOCATION</td>
<td>0.02</td>
<td>-0.03</td>
<td>-0.01</td>
<td>-0.01</td>
<td>0.08</td>
<td>0.06</td>
<td>0.08</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LN_SIZE</td>
<td>-0.32*</td>
<td>0.21*</td>
<td>0.13</td>
<td>0.13</td>
<td>-0.26*</td>
<td>0.06</td>
<td>0.09</td>
<td>0.02</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESOURCE</td>
<td>0.02</td>
<td>0.16*</td>
<td>0.04</td>
<td>-0.09</td>
<td>-0.29*</td>
<td>-0.11</td>
<td>-0.33*</td>
<td>-0.11</td>
<td>0.15</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>TRIAD</td>
<td>-0.06</td>
<td>0.57*</td>
<td>0.58*</td>
<td>0.58*</td>
<td>-0.31*</td>
<td>0.04</td>
<td>-0.06</td>
<td>-0.02</td>
<td>0.19*</td>
<td>0.11</td>
<td>1.00</td>
</tr>
</tbody>
</table>

$N = 6838.$

* $p < 0.01$ (two-tailed test).
consider the effect of changing by one unit a regressor on the \( j \)th probability as follows:

\[
\frac{\partial P_{rij}}{\partial x_{ij}} = P_{rij} \left( \beta_{ij} - \sum_{k=1}^{3} P_{rik} \beta_{ik} \right)
\]

where \( k = 1, 2, 3 \) is majority joint venture, co-ownership and minority joint venture, respectively.

The value of the marginal change depends on the levels of all variables in the model (Long & Freese, 2006), therefore, as the value of \( x_k \) changes, the sign of the marginal can also change. Multinomial logit coefficients and marginal effects for a particular variable may have different signs. For example, while there may be a positive sign for the cultural distance on majority owned joint venture, the marginal effect could be negative (Wei, Liu & Liu, 2005; Long & Freese, 2006).

4. Results and discussion

Empirical results are presented in Tables 3 and 4. The estimated coefficients as shown in Tables 3 and 4 should be interpreted as representing the marginal utility of choosing a joint venture or a lower equity mode over a WOS. Therefore a negative coefficient signifies less likelihood of the venture being chosen as a JV or a lower equity mode over a WOS.

The model presented in Table 3 estimates the likelihood of choosing JVs compared to a WOS. The \( \chi^2 \) is highly significant for the model \( (p < 0.000) \) exhibiting an excellent level of overall fit.

### 4.1. Hypotheses tests

As shown in Table 3, POLCON has a positive and highly significant coefficient providing strong support for H1. Model coefficients regarding POLCON (political constraints) imply that MNEs prefer co-ownership JVs to either minority ownership JVs or majority ownership JVs compared to a WOS. Recent changes in political stability seem to be reflected in the POLCON index for Turkey.

There is a moderate support for H2 in that only the first model has a positive and significant coefficient (majority owned JVs compared to WOS). The index of corruption perception (CORRUPT) is not significant in the other two models, providing moderate support for H2. This finding suggests that although MNEs operating in industries with high moral hazard prefer JVs over WOS, the composition of equity ownership will likely be a majority JV, which partly supports H2.

The coefficients of cultural distance (CULTDIST) are positive and significant, supporting H3. This implies, *ceteris paribus*, that when the cultural distance is high between the home and host countries, MNEs tend to prefer JVs over WOSs. In the case of Turkey, given the strength of the coefficients, *ceteris paribus*, the greater the distance between home countries and Turkey, the higher the likelihood that MNEs will prefer minority and co-ownership JVs compared to a WOS.

Linguistic distance emerges as an important explanatory variable. Results presented in Table 3 show that

### Table 3

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Variable definition</th>
<th>Prob((Y) = majority owned JV)</th>
<th>Prob((Y) = equal owned JV)</th>
<th>Prob((Y) = minority owned JV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td>−3.47*** (0.31)</td>
<td>−3.57*** (0.37)</td>
<td>−1.67*** (0.29)</td>
</tr>
<tr>
<td>POLCON</td>
<td>Political constraints index</td>
<td>0.64*** (0.18)</td>
<td>0.87*** (0.22)</td>
<td>0.43** (0.17)</td>
</tr>
<tr>
<td>CORRUPT</td>
<td>Corruption index</td>
<td>0.02 (0.00)</td>
<td>0.01 (0.01)</td>
<td>0.01 (0.01)</td>
</tr>
<tr>
<td>CULTDIST</td>
<td>Cultural distance</td>
<td>0.19** (0.05)</td>
<td>0.19** (0.06)</td>
<td>0.25*** (0.05)</td>
</tr>
<tr>
<td>LINGDIST</td>
<td>Linguistic distance</td>
<td>0.24*** (0.09)</td>
<td>0.29** (0.09)</td>
<td>0.21*** (0.75)</td>
</tr>
<tr>
<td>AGGLOMER</td>
<td>Agglomeration of FDI firms</td>
<td>−0.62*** (0.09)</td>
<td>−0.12 (0.09)</td>
<td>−0.21*** (0.07)</td>
</tr>
<tr>
<td>R&amp;DINTS</td>
<td>R&amp;D intensity of the target industry</td>
<td>−0.01* (0.01)</td>
<td>−0.01* (0.01)</td>
<td>−0.02** (0.01)</td>
</tr>
<tr>
<td>ADVINTS</td>
<td>Advertising intensity of the target industry</td>
<td>0.01* (0.00)</td>
<td>0.01* (0.00)</td>
<td>0.01 (0.00)</td>
</tr>
<tr>
<td>LOCATION</td>
<td>Location of affiliate</td>
<td>−0.42*** (0.07)</td>
<td>−0.22*** (0.08)</td>
<td>−0.20*** (0.07)</td>
</tr>
<tr>
<td>LN_SIZE</td>
<td>Logarithm of the capital size of affiliate</td>
<td>0.24*** (0.02)</td>
<td>0.11*** (0.02)</td>
<td>0.08*** (0.02)</td>
</tr>
<tr>
<td>RESOURCE</td>
<td>Resource intensiveness of the target industry</td>
<td>0.28** (0.12)</td>
<td>0.22 (0.14)</td>
<td>0.09 (0.12)</td>
</tr>
<tr>
<td>TRIAD</td>
<td>Triad countries</td>
<td>−0.13 (0.12)</td>
<td>0.26 (0.14)</td>
<td>0.31** (0.12)</td>
</tr>
</tbody>
</table>

Number of observations: 6832; Standard errors in parentheses; LR \( \chi^2 \): 748.54; Prob. \( \chi^2 \): 0.000; log likelihood: −8170.87; pseudo-\( R^2 \): 0.114.

\* \( p < 0.05 \).

\** \( p < 0.01 \).

\*** \( p < 0.001 \).
Table 4
Marginal effects of explanatory variables on ownership level—estimated from a multinomial logistic regression model

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Variable definition</th>
<th>WOS</th>
<th>Majority owned JV</th>
<th>Equal owned JV</th>
<th>Minority owned JV</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLCON</td>
<td>Political constraints index</td>
<td>-0.09** (0.02)</td>
<td>0.12*** (0.02)</td>
<td>-0.07** (0.03)</td>
<td>0.04 (0.03)</td>
</tr>
<tr>
<td>CORRUPT</td>
<td>Corruption index</td>
<td>-0.01*** (0.01)</td>
<td>-0.00 (0.00)</td>
<td>-0.01 (0.00)</td>
<td>-0.01** (0.00)</td>
</tr>
<tr>
<td>CULTDIST</td>
<td>Cultural distance</td>
<td>-0.01** (0.01)</td>
<td>-0.01 (0.01)</td>
<td>-0.03*** (0.01)</td>
<td>0.05*** (0.01)</td>
</tr>
<tr>
<td>LINGDIST</td>
<td>Linguistic distance</td>
<td>-0.02 (0.01)</td>
<td>0.02*** (0.01)</td>
<td>0.02* (0.01)</td>
<td>-0.06*** (0.01)</td>
</tr>
<tr>
<td>AGGLOMER</td>
<td>Agglomeration of FDI firms</td>
<td>-0.07*** (0.09)</td>
<td>-0.01 (0.01)</td>
<td>-0.01 (0.01)</td>
<td>0.08*** (0.01)</td>
</tr>
<tr>
<td>R&amp;DINTS</td>
<td>R&amp;D intensity of the target industry</td>
<td>0.00 (0.00)</td>
<td>0.00 (0.00)</td>
<td>0.01** (0.00)</td>
<td>-0.00*** (0.00)</td>
</tr>
<tr>
<td>ADVINTS</td>
<td>Advertising intensity of the target industry</td>
<td>-0.00 (0.00)</td>
<td>-0.00 (0.00)</td>
<td>-0.01 (0.00)</td>
<td>0.00*** (0.00)</td>
</tr>
<tr>
<td>LOCATION</td>
<td>Location of affiliate</td>
<td>-0.05*** (0.01)</td>
<td>-0.01 (0.01)</td>
<td>-0.01 (0.01)</td>
<td>0.07*** (0.01)</td>
</tr>
<tr>
<td>LN_SIZE</td>
<td>Logarithm of the capital size of affiliate</td>
<td>-0.03*** (0.00)</td>
<td>0.01** (0.00)</td>
<td>0.01 (0.00)</td>
<td>0.03*** (0.00)</td>
</tr>
<tr>
<td>RESOURCE</td>
<td>Resource intensiveness of the target industry</td>
<td>0.03** (0.02)</td>
<td>-0.02 (0.02)</td>
<td>-0.01 (0.02)</td>
<td>-0.05** (0.02)</td>
</tr>
<tr>
<td>TRIAD</td>
<td>Triad countries</td>
<td>-0.04*** (0.02)</td>
<td>0.02* (0.01)</td>
<td>0.05** (0.02)</td>
<td>-0.04* (0.02)</td>
</tr>
</tbody>
</table>

Number of observations: 6832; Standard errors in parentheses; marginal effects are evaluated at the mean values of the explanatory variables.

* dy/dx is for discrete change of dummy variable from 0 to 1.
** p < 0.05.
*** p < 0.01.
**** p < 0.001.

The coefficients on LINGDIST are all positive and significant, thus H4 is supported. Co-ownership JV has the most significant coefficient implying that the higher the linguistic distance between home and host countries the more likely will be co-ownership JVs. This finding is also consistent with the finding relating to H3 and demonstrates that the measure of cultural distance, which has been heavily used by researchers in international business, might be strengthened by measures like linguistic distance (Dow & Karunaratna, 2006), or as suggested by (Xu et al., 2004) normative and regulative distance measures.

Industrial agglomeration of FDI firms from the same country of origin emerges with very significant negative coefficients in two models, indicating the greater the FDI concentration the more likely a WOS will be chosen which supports H5. These findings on the relationship between industrial agglomeration and equity ownership support the transaction cost theory in the way that industrial agglomeration can be interpreted as an indicator of attractiveness of the market; therefore, a new entry will be relatively less risky. The same finding can also be interpreted in the light of institutional theory in that institutional changes such as removal of barriers and political constraints, lesser bureaucracy and red tape will encourage MNEs to prefer higher equity stakes in new ventures.

Results presented in Table 3 imply that in R&D intensive industries, JVs in any form (majority, minority or co-ownership) will not be the first choice of MNEs in Turkey. This supports H6 confirming that a foreign investor is more likely to choose a WOS over a JV in R&D intensive industries. This finding may be generalized to other emerging market economies with fewer political constraints. The negative and significant coefficients on R&D intensity support the arguments of transaction cost theorists.

The results related to advertising intensity provide no support for H7. The positive signs on the coefficients of advertising intensity indicate a preference for JVs over WOS which is contrary to the expected relationship as hypothesized in H7, and also contradicts some previous findings and transaction cost arguments as noted earlier. The result may partly be attributed to the composition of the sample. The previous evidence in the literature is mixed and our findings support the argument that in marketing oriented operations, advertising intensity does not discourage MNEs from preferring JVs.

The coefficients on LOCATION are negative and significant, providing strong support for H8, i.e., a foreign investor is more likely to choose a WOS over a JV or a lower equity mode when the affiliate is located in the developed regions of the host country. In other words, regions with a large pool of trained labor and good infrastructure tend to attract more WOSs. The results indicate that LOCATION is an important dimension of equity ownership decision of MNEs.

The variable LN_SIZE has positive and significant coefficients, providing strong support for H9, i.e. that a foreign investor is more likely to choose a JV or a lower equity mode over a WOS as the capital size of the affiliate increases.

The control variable RESOURCE reveals only a marginal effect on choosing a majority owned JV. More interestingly, the results for the control variable TRIAD
show that firms from triad countries are more likely to establish co-ownership or minority ownership JVs than WOSs. A possible interpretation might be that linguistic distance between Turkey and most of the triad countries is high. Other institutional differences (cultural, linguistic and transparency) also follow the same pattern. It is possible, therefore, that the findings related to TRIAD reflect the previously noted institutional factors.

4.2. Marginal effects of explanatory variables on ownership levels

As in the proceeding analysis of multinomial logistic analysis presented in Table 3, we also examined marginal effects of independent variables on ownership levels. This procedure reveals some statistically significant marginal effects. Statistically significant coefficients presented in Table 4 indicate the extent to which each explanatory variable affects the marginal utility of the relevant ownership strategy. A marginal change in political constraints shows that the probability of majority owned joint ventures is affected positively while the probability of wholly owned and 50–50 owned joint ventures are affected negatively. This indicates that political constraints push MNEs to choose majority owned joint ventures or to opt out of an equal stake in order to manage the danger of political risk.

Corruption perception does not appear to have any significant marginal impact on the preference for majority owned joint venture and co-ownership JVs, but appears to have a significant negative marginal effect on WOS and minority owned joint venture strategies, i.e. organizations are less inclined to establish these organizational modes. Where the perception of corruption is high, the probability of opting for a majority owned joint venture increases (Table 3), while the marginal utility of minority owned joint ventures is negative. When actual estimations and marginal effects are considered together, it appears that when the perception of corruption is high, MNEs tend to choose majority joint ventures but do not opt for a minority stake which yields a negative marginal utility. This finding is not surprising in that if host country environments are characterized by a high level of uncertainty (a perception of a high level of corruption creates such an uncertainty), minority equity ownership in a JV would be a risky option compared with either a majority owned JV or a WOS. When dealing with uncertain and non-transparent rules, firms develop their own coping mechanisms. Choosing a majority owned JV would at least enable foreign investors to insulate themselves from arbitrary interventions by host officials. By teaming up with a local firm in a majority owned JV, the foreign investor gains both equity control and external legitimacy.

The marginal effect of cultural distance appears to have a significant negative impact on WOS and co-ownership JV, but a significant positive effect on minority owned joint ventures. This finding implies that as cultural distance increases, ceteris paribus, the likelihood of choosing WOS and co-ownership JV declines, but the likelihood of choosing a minority JV increases.

Linguistic distance displays a negative significant marginal effect on WOS and minority JVs, and positive significant marginal effect on majority JVs. This finding implies that as linguistic distance between home and host countries of an investment increases, it is more likely that a foreign investor chooses a majority JV. A minority owned operation is also less likely, signifying a non-linear marginal effect of linguistic distance on foreign equity ownership. These findings also imply that linguistic distance could be seen as detrimental to the effective control and management of an operation.

The marginal effect of agglomeration has a highly significant negative effect on WOS but a highly significant positive effect on minority JVs. As the number of foreign enterprises in an industry in the same country increases, MNE’s confidence in managing and controlling interest in minority JVs also appears to increase.

The marginal effect of R&D intensity is to increase the preference for a WOS, which is an expected finding. More interestingly, however, co-ownership JVs emerge with the highest marginal effect. This could be explained by local parent firms’ persistent strategies of establishing strategic alliances with MNEs in R&D intensive industries. This is particularly true when local industrial groups are involved in alliances with MNEs. Industrial conglomerates in Turkey tend to enter co-ownership JVs when the operation is a large scale and in an R&D intensive industry (Demirbag, Mirza, & Weir, 1995). Advertising intensity of an industry, however, appears to have a negative marginal effect on the preference for WOS, while having a positive effect on the preference for a minority JV. This implies that in advertising intensive industries local partners of JVs are more likely to have more equity shares than foreign partners. This might be explained by local and market knowledge endowments and cultural adaptation skills of local partners.
The marginal effect of size of operation is positively and significantly associated with majority JVs and minority JVs. Size also has a negative and significant effect on wholly owned subsidiaries. This implies that, as the size of operation increases, ceteris paribus, the probability of undertaking majority and minority JVs increases significantly and the likelihood of WOS significantly decreases.

For the binary variables of location, resource and triad, the discrete change from 0 to 1 is also presented in Table 4. The results show that relatively less FDI project attracting regions have a significant and negative effect on the likelihood of WOS but a positive and significant effect on minority owned joint ventures. Similarly, TRIAD (firms from triad nations) indicates positive and significant associations with majority and co-ownership JVs. Marginal effect analysis also indicates a significant negative association between WOS and minority ownership strategies and TRIAD.

5. Conclusions

This study adopts both institutional and transaction cost perspectives to estimate equity ownership patterns of MNEs entering an emerging market economy. A large database of MNEs’ subsidiaries in Turkey allowed us to test rigorously a set of hypotheses based on the arguments of institutional and transaction cost theories.

In terms of the determinants of equity ownership in foreign subsidiaries, most of the hypotheses were supported. Particularly important in determining equity ownership were found to be political risk, cultural distance, linguistic distance, agglomeration, location and the size of the affiliate.

Our study contributes to the literature in a number of ways. We adopt measures that have not been employed in most of the prior studies examining entry modes or ownership patterns of MNEs. Amongst these, linguistic distance is an important dimension which we operationalize and test to explain equity ownership patterns of MNEs. The perception of the level of corruption is another novel dimension operationalized and tested in this paper. A distinguishing feature of our analysis is that we test the marginal effects of both institutional and transaction cost related variables in explaining ownership patterns of MNEs.

The empirical evidence presented in this paper is consistent with the existing literature on factors affecting the entry mode decision. However, this study extends the number of variables examined and also estimates partnership structures which may have practical implications for managers. For instance, in R&D intensive industries, MNEs tend to use WOS rather than any other ownership structure. The second option in R&D intensive industries (judging from coefficients presented in both models) seems to be a majority joint venture. As local firms try to acquire knowledge and expertise through strategic alliances with MNEs, in R&D intensive industries they may have to settle for minority equity stakes in joint ventures with foreign MNEs.

As discussed in the methodology section, this study uses a large database and has adopted new dimensions from various sources. Although these new dimensions increase the robustness of our findings, a caution should be exercised when interpreting the results. There may be further limitations as some of the measures (POL-CONV, transparency differences and linguistic distance) are empirically examined for the first time in an emerging market context.

Further research would extend the investigation in several directions. First, research analyzing changes over time in ownership patterns would enhance our understanding of the impact of institutional changes on equity compositions of subsidiaries. Second, the linguistic distance measure used in this study should be replicated in another context, which would further validate the findings of this study. Third, comparison studies of countries with a similar development level to that of Turkey and diverse culture dimensions would provide an in-depth insight into the role of the institutional environment and organizational factors in ownership structures of subsidiaries in emerging market economies.

References


