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Top Management Team Internationalization and Firm-level Internationalization: The Moderating Effects of Home-region Institutional Diversity and Firm Global Focus

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ABSTRACT

The factors that determine firms' levels of internationalization remain a focal area of international business research. Within this research stream, studies building on the upper echelons theory have investigated the influence of the demographic characteristics of the top management team (TMT) on firms' international expansion. However, the literature to date has overlooked the TMT's overall degree of internationalization as a key driver of firm-level internationalization. In our paper, we argue that by having self-selected into careers abroad, foreign TMT members by definition have a higher cognitive tolerance of foreignness than domestic TMT members do. We theorize that foreign TMT members' higher cognitive tolerance for foreignness enhances the overall TMT's level of international attention and international trust, thereby facilitating strategic decisions that favor firm-level internationalization. Additionally, we propose two key contingencies that attenuate this relationship: the institutional diversity of the firm's home region and the firm's global focus. Analysis of Fortune Global 500 firms supports the hypothesized relationship between TMT internationalization and firm-level internationalization, as well as the two moderation effects.

1. Introduction

Understanding the factors underlying firm-level internationalization continues to be a central endeavor in the international business (IB) domain (Kirca et al., 2012). Within this literature, a stream of research has drawn from Hambrick and Mason's (1984) upper echelons theory to discern how specific demographic characteristics of the top management team (TMT) affect the extent and pattern of firms' internationalization. For instance, studies have shed light on the important role of TMT members' average age, tenure, education levels, and international experience (Carpenter et al., 2001, 2003; Rivas, 2012; Sambharya, 1996; Sanders and Carpenter, 1998; Tihanyi et al., 2000). Others have examined the heterogeneity of such TMT characteristics in relation to firm-level internationalization (Carpenter and Fredrickson, 2001; Kirca et al., 2012; Rivas, 2012; Tihanyi et al., 2000). A few studies have focused on the nationalities of TMT members, considering, e.g., how this type of heterogeneity affects the choice of foreign entry modes (Nielsen and Nielsen, 2011).

While the aforementioned stream of research has generated important insights, it has tended to emphasize learning and knowledge-based mechanisms associated with heterogeneity, while paying little attention to cognitive mechanisms such as those associated with foreignness (Bromiley and Rau, 2016). In contrast, IB research on managerial cognition has highlighted the key role

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of frames such as “global mindset” (Levy et al., 2007: 231), “geocentric mindset” (Kobrin, 1994: 493), and “transnational mindset” (Bartlett and Ghoshal, 1989: 17), in firm's ability to succeed internationally. Yet, by only considering such frames in parallel to internationalization, i.e., “as firms globalize” (Levy et al., 2007: 233), this body of research has tended to take internationalization as a given feature of the firm's context instead of as an outcome of strategic decisions shaped by the cognitive dynamics within the TMT. As such, researchers have begun to highlight the relative lack of scholarly attention for the cognition of decision-makers involved in internationalization processes (Maitland and Sammartino, 2015).

In our paper, we aim to link these streams of research by elucidating the distinct role of cognitive mechanisms associated with foreignness in driving firm-level internationalization. Our foundational argument is that foreign TMT members, defined as TMT members whose primary nationality differs from that of the firm's home country, show greater openness to foreignness than their domestic counterparts do (Cerdin et al., 2014; Levy et al., 2007; Zikic et al., 2010). Specifically, as a function of having self-selected into non-temporary foreign employment, foreign TMT members are by nature less likely to see borders as obstacles or foreign markets as risky. We argue that this openness to foreignness translates into two mechanisms at the TMT-level that facilitate the international expansion of the firm: higher levels of *international attention*, which is a fundamental trigger for the development of a firm's international strategy (Bouquet and Birkinshaw, 2011), and higher levels of *international trust*, which is a critical facilitator of firm-level internationalization (Kwon et al., 2016). Thus, we propose a positive relationship between TMT internationalization and firm-level internationalization.

Additionally, we propose two key contingencies that we expect will attenuate this relationship: the *institutional diversity* of the firm's home region and the firm's *global focus*. Home-region institutional diversity (Banalieva and Dhanaraj, 2013) is a firm-external contingency that we expect to affect the level of experience domestic TMT members will have had interacting with others from foreign environments that are significantly different from the home country. The firm's global focus, reflecting the degree to which the firm targets markets outside its home region (Oh and Rugman, 2014), is a firm-internal contingency we expect affects the level of experience domestic TMT members will have accumulated conducting business in extra-regional markets that differ substantially from the home market. We conceptualize contingencies in reference to the home region because extant research corroborates the salience of both intra- and extra-regional considerations in international strategy (e.g., Arregle et al., 2009; Delios and Beamish, 2005; Goerzen and Beamish, 2003; Sammartino and Osegowitsch, 2013). We theorize that both factors are associated with an increased cognitive tolerance of foreignness among domestic TMT members, implying their levels of international attention and international trust will more closely proximate those of foreign TMT members. As such, we expect both factors will reduce the relative impact of foreign TMT members on firm-level internationalization.

We tested these hypothesized relationships with data from firms included in the 2013 and 2014 Fortune Global 500 listings (Rugman and Oh, 2010, 2011; Rugman and Verbeke, 2004). Using both sales-based and affiliate-based measures of internationalization and a one-year lag, we found support for our initial hypothesis that a more international TMT leads to greater firm-level internationalization. Additionally, consistent with our remaining hypotheses, we found evidence that home-region institutional diversity and firm global focus both negatively moderate this relationship. Further model specifications aimed at addressing potential endogeneity and a number of other robustness tests lend additional support to our conclusions.

In so doing, our work contributes to understanding the drivers of firm-level internationalization in two important ways. First, our study extends the upper echelons literature by explicating the role of foreignness in relation to firm-level internationalization. By arguing that foreign TMT members' higher cognitive tolerance for foreignness drives firm-level internationalization through its effects on the TMT's international attention and trust, we extend beyond the heterogeneity-based arguments offered in prior research to elucidate the distinct role of foreignness in driving firm-level internationalization. In so doing, we build on the recent call for more research on the cognitive foundations of firms' internationalization (Maitland and Sammartino, 2015) to shed light on specific cognitive mechanisms that may link TMT internationalization and the firm's foreign expansion. Second, building on the notion that the disparity between foreign and domestic TMT members' cognitive tolerance of foreignness can vary, we shed light on two key contingencies that attenuate the effects of TMT internationalization on firm-level internationalization. Specifically, we show that the effects of TMT internationalization on firm-level internationalization are attenuated when the firm's home region is institutionally more diverse and the firm's focus more extra-regional.

We structure the remainder of the paper as follows: first, we review the relevant literature and introduce the constructs that are of interest for the purpose of our study. Then, we develop our hypotheses. The methods section describes the data collection, the variables we operationalized, and the analysis we undertook to test our hypotheses. Finally, we discuss our findings and offer concluding remarks.

2. Theory development and hypotheses

Over the past few decades, TMTs have been the objects of numerous studies, many of which have drawn from Hambrick and Mason's (1984) upper echelons theory. Rooted in the behavioral theory of the firm, upper echelons theory suggests that top executives' behavioral and psychological attributes influence the decisions they make. This theoretical approach has triggered important research focusing on executives' characteristics and investigating their effects on a number of firm-level outcomes (Bromiley and Rau, 2016).

2.1. Research on TMT characteristics and firm-level internationalization

Within this stream of literature, prior studies have shown a clear association between a number of general TMT characteristics and

firm-level internationalization (Carpenter et al., 2001, 2003; Rivas, 2012; Sambharya, 1996; Sanders and Carpenter, 1998; Tihanyi et al., 2000; see also Kirca et al. (2012) for an overview). For instance, Sanders and Carpenter (1998) showed that a larger TMT is positively associated with firm-level internationalization. They argued that a large TMT provides a firm with a broader set of intangible cognitive resources, information sources, and network ties that enhance members' collective capacity to process complex information and allow for a more effective division of labor. Similarly, others have linked average TMT age to firm-level internationalization (Tihanyi et al., 2000), based on the notion that younger TMTs are more open to risk and strategic change, and thus international diversification, than older TMTs (Hambrick and Mason, 1984; Wiersema and Bantel, 1992). Longer tenure has also been linked to firm-level internationalization because longer tenure is said to be associated with TMT members' greater social cohesion (Amason and Sapienza, 1997), an essential attribute when it comes to the successful implementation of internationalization strategies (Kirca et al., 2012). Finally, scholars have shown that more international firms tend to have more highly-educated TMTs, based on the notion that higher education levels are associated with greater degrees of innovation and openness to change (Carpenter and Fredrickson, 2001; Kirca et al., 2012).

Studies adopting an experience-based lens have also consistently shown that TMTs with more international experience are associated with higher levels of firms' internationalization (Chen et al., 2017; Kirca et al., 2012; Shrader et al., 2000). Experience abroad provides managers with first-hand awareness of the opportunities harbored by foreign markets (Athanassiou and Nigh, 2002; Tihanyi et al., 2000). This awareness contributes to the development of a global mindset (Levy et al., 2007), reducing the anxiety within the TMT associated with operating in situations of greater uncertainty, such as overseas markets (Sambharya, 1996). Additionally, managers with international experience are more likely to have a broader, established international network that may facilitate the firm's foreign expansion, especially in the case of new ventures (Shrader et al., 2000).[1] At the same time, others note that knowledge-building through international experience is a lengthy, cumbersome process because international experiential learning has difficulty overcoming—and is even altered by—the established nationality imprinting of managers' home-country roots (Gupta and Govindarajan, 2002). Moreover, accumulated international experience may become outdated or irrelevant as the business landscape changes (Anand et al., 2002; Fernhaber et al., 2009).

A third stream of studies has investigated the degree of heterogeneity, or diversity, of the aforementioned TMT characteristics in relation to firm-level internationalization. Yet this body of research is divided: some scholars, for instance, have argued that TMT heterogeneity relates *positively* to firm-level internationalization. This is because greater diversity implies, e.g., more creativity, less groupthink, and a greater variety of abilities, perspectives, and competences that contribute to decision-making effectiveness when facing the complexity of the internationalization process (Bantel and Jackson, 1989; Kaczmarek and Ruigrok, 2013; Kirca et al., 2012). In contrast, other scholars have argued that TMT heterogeneity is *negatively* associated with firms' international expansion, because greater heterogeneity can lead to more conflict and disagreement (Bantel and Jackson, 1989), as well as the creation of subgroups that can jeopardize communication within the team (Barkema and Shvyrkov, 2007; Kaczmarek and Ruigrok, 2013; Kirca et al., 2012).

Importantly, the heterogeneity perspective is limited by the implicit assumption that all sources of heterogeneity have the same effect. That is, a TMT consisting of 50% domestic nationals and 50% foreign nationals from a single foreign country would be considered just as heterogeneous as a TMT consisting of 100% foreign nationals split equally across two foreign countries (cf., e.g., Kaczmarek and Ruigrok, 2013; Nielsen and Nielsen, 2011, 2013). Overlooking the distinct role of foreignness in the TMT may be one reason why extant research on TMT internationalization and firm-level internationalization is theoretically conflicted and empirically mixed (Carpenter and Fredrickson, 2001; Kirca et al., 2012; Rivas, 2012; Tihanyi et al., 2000). In our paper, we address this issue by arguing that the TMT cognition associated with its overall level of foreignness may be an important yet overlooked key driver of firm-level internationalization.

2.2. TMT internationalization, TMT cognition, and firm-level internationalization

IB scholars have increasingly emphasized the function of cognitive abilities that allow managers to operate successfully in a culturally diverse world (Kim et al., 2015; Johnson et al., 2006; Levy et al., 2007; Shapiro et al., 2008). Research has highlighted the importance of concepts such as global mindset—defined as a cognitive frame of reference of key decision-makers that promotes a cosmopolitan attitude towards the world (Levy et al., 2007), and cultural intelligence—which refers to "a multifaceted culture-general form of intelligence that is related to effective intercultural interactions" (Thomas et al., 2015: 1100).

While this research has generated important insights on the role of cognition in the global business environment, it has tended to approach internationalization as a purely exogenous factor characterizing firms' environments (Thomas et al., 2015). That is, the focus has been on understanding managers' ability to overcome challenges "as firms globalize" (Levy et al. 2007: 233), rather than on investigating the role of such cognitive frames in *driving* the internationalization of the firm. Recent IB research has begun to shed light on the cognitive differences between key decision-makers involved in internationalization processes (Maitland and Sammartino, 2015). Yet thus far scholars continue to overemphasize "the objective characteristics of the situation" (Finkelstein and Hambrick, 1996: 20) at the expense of a deeper understanding of decision makers' cognition, such as that related to foreignness (Greve et al., 2015).

[1] Aligned with this perspective, previous research has also shown that new ventures whose TMT members have limited or no international experience may overcome these shortcomings by tapping into the international knowledge of external sources, for instance their domestic partners (Fernhaber et al., 2009; Milanov and Fernhaber, 2014).

This is a striking omission given that the cognitive frames of foreign TMT members are likely to differ in systematic ways from those of domestic TMT members. For instance, whereas domestic TMT members operate in the relative comfort and safety of the home-country environment they grew up in, foreign TMT members are "qualified immigrants who self-initiate international careers" (Zikic et al., 2010: 668). Additionally, in contrast to the temporary employment relationship that traditional expatriates engage in (Andresen et al., 2014; Dickmann and Baruch, 2011; Doherty et al., 2013; Glassock and Fee, 2015), the overseas employment relationship that foreign TMT members self-select into is undetermined and uncertain. As such, the "decision to go" abroad (Cerdin et al., 2014: 152) is a crucial distinguishing factor between foreign and domestic TMT members.

In line with research showing that employment success in foreign countries is ultimately a function of the desire to emigrate in the first place (Cerdin et al., 2014), we argue that the "decision to go" is rooted in cognitive and attitudinal traits possessed by the manager that guide his or her choices. For instance, research shows that individuals who take on employment abroad are more likely to be proactive, highly motivated, and resilient (Zikic et al., 2010). In contrast, individuals who are less open to foreign contexts are less likely to be successful abroad and less likely to find gainful employment (Wilson et al., 2013). In fact, while a great many antecedents (e.g., cultural, political, and economic) may exist for such traits, predominant among them are socio-psychological factors such as openness, external values, and liberalism (Shankarmahesh, 2006). In sum, the motivation to enter a foreign context and to do so successfully requires "both physical and psychological mobility" (Zikic et al., 2010: 668), which are rooted in individual-level characteristics (cf. Kraimer et al., 2016).

For instance, the propensity to self-select into non-temporary employment abroad suggests that foreign TMT members are less likely to be ethnocentric—less focused on the home country—and more open to the notion of foreignness. Ethnocentrism reflects an affective and normative "general tendency" (Shankarmahesh, 2006: 148) towards mental rigidity (Rokeach, 1948) that favors the home country over others (without discriminating among those others), while non-ethnocentric attitudes are characterized by a greater tolerance for risk, and a likelihood of focusing on gain versus loss. By implication, then, non-ethnocentric attitudes are associated with a weaker perception of, and focus on, national borders. Thus, as non-nationals who have made the step to go international themselves, foreign TMT members emphasize the gain frame (i.e., "going abroad is a worthwhile decision likely to lead to opportunity") over the loss frame (i.e., "compared to my home country, other countries look inherently risky") when it comes to looking across borders (Cerdin et al., 2014).

This greater openness to foreignness translates into two specific mechanisms that facilitate the international expansion of the firm. The first is a higher level of international attention among the TMT, defined as the extent to which TMT members "invest time and effort in activities, communications, and discussions aimed at improving their understanding of the global marketplace" (Bouquet et al., 2009: 108). The greater cognitive tolerance of foreignness that characterizes foreign TMT members leads to a higher level of international attention because it helps them to better interpret and react to stimuli coming from the global marketplace and to better identify opportunities across borders (Bouquet and Birkinshaw, 2011; Bouquet et al., 2009). In so doing, foreign TMT members' tolerance for foreignness steers the activities, communications, and discussions of the TMT in ways that facilitate the development of the firm's international strategy (Bouquet and Birkinshaw, 2011).

The second mechanism relates to foreign TMT members' higher level of international trust. International trust—defined as the degree of trust a firm's decision-makers place in a foreign business partner as a function of that partner's nationality—has long been recognized as an important factor enabling international business (Zaheer and Zaheer, 2006). International trust has a significant role in shaping internationalization processes (Kwon et al., 2016), especially when it comes to the way in which a firm's decision-makers deal with cross-border challenges (Muethel and Hoegl, 2012). The higher cognitive tolerance of foreignness that characterizes foreign TMT members is associated with a higher level of international trust because international trust is a function of tolerance for differences, greater intercultural understanding, and an emphasis on gain frames over loss frames (Zaheer and Zaheer, 2006). Not only does foreign TMT members' higher level of international trust facilitate the creation and development of the international relationships required to internationalize, it also creates the opportunity for domestic TMT members to learn to trust their foreign partners. Belonging to the same TMT facilitates such learning because group membership is a powerful source of social category-based inferences that allows for the generalization of trust (Landrum et al., 2015). In sum, greater TMT internationalization implies a higher level of international attention and international trust, and thus a greater likelihood of taking strategic decisions that lead to increased internationalization of the firm.[2] We hypothesize as follows:

Hypothesis 1. The greater the TMT internationalization, the greater the firm-level internationalization.

2.3. The institutional diversity of the home-region environment

The first contingency that we propose attenuates the relationship between TMT internationalization and firm-level internationalization is external to the firm and corresponds to the institutional diversity of the firm's home-region environment. Countries' institutional profiles—defined as their respective sets of regulatory, cognitive, and normative institutions—can vary substantially (Kostova and Roth, 2002). Given that institutional differences are associated with perceptions of uncertainty and risk (Dow and

[2] We emphasize here that our arguments are distinct from those made in relation to internationalization of the board of directors. That is, some have argued that "board internationalization is one of the last steps in the internationalization process of the multinational corporation" (Piekkari et al., 2015: 38) and thus *follows* firm-level internationalization (Oxelheim et al., 2013). Yet, the arguments applied in the case of boards are not likely to hold in the case of TMTs. Specifically, TMTs have a forward-looking function, whereas boards have a backward-looking function. TMTs formulate and implement firm strategy (Nielsen and Nielsen, 2011), while boards are primarily tasked with monitoring, control, and service (Fama and Jensen, 1983; Monks and Minow, 1995; Rivas, 2012).

Karunaratna, 2006), scholars have investigated how dissimilarities in institutional environments affect international firms' operations, using the dyadic notion of home-host country institutional distance (Abdi and Aulakh, 2012; Berry et al., 2010; Campbell et al., 2012; Salomon and Wu, 2012; Slangen and Beugelsdijk, 2010). A parallel stream of research has suggested that a regional institutional *diversity* construct may be more appropriate because regional considerations often play an important role in the formulation and execution of firms' international strategies (Arregle et al., 2009; Banalieva and Dhanaraj, 2013; Goerzen and Beamish, 2003). Building on this latter strand of studies, we adopt a contingency approach to examine how the diversity of the home-region institutional environment may alter the positive effects of TMT internationalization on firm-level internationalization.

Specifically, we argue that the more institutionally diverse and more complex the firm's home-region environment, the more comfortable domestic TMT members are likely to be with foreignness. That is, a greater variety of institutional environments encountered in the proximity of the home country (cf. Maitland and Sammartino, 2015), and therefore present in domestic TMT members' cognitive imprinting, helps to weaken domestic TMT members' cognitive perception of borders as barriers. Even though diversity in the home-region institutional environment is associated with a greater burden of information processing (Banalieva and Dhanaraj, 2013; Kostova and Zaheer, 1999), a byproduct of this additional information processing is that domestic TMT members will have had more experience accommodating differences and unfamiliar social situations, for instance in school or through vacation travel in neighboring countries. As such, home-region institutional diversity contributes to the development of a cognitive frame promoting greater tolerance of foreignness (cf. Levy et al., 2007).

Building on this logic, we suggest that a greater home-region institutional diversity reduces the gap between foreign and domestic TMT members in terms of their cognitive tolerance of foreignness. In particular, we argue that a greater home-region institutional diversity increases the likelihood that domestic TMT members' levels of international attention and trust will be more similar to those characterizing foreign TMT members. The level of international attention will be higher because domestic TMT members in institutionally diverse regions will have grown up with greater diversity of environmental stimuli stemming from the immediate geographic proximity of the home country, which makes international matters more salient. Similarly, international trust will be higher because the more experience domestic TMT members have accumulated interacting with partners from institutionally diverse neighboring countries, the more likely they are to generalize inferences of trustworthiness to unknown members of the same category with whom they have no direct prior experience (Landrum et al., 2015). By reducing the gap in international attention and international trust between foreign and domestic TMT members, home-region institutional diversity attenuates the relationship between TMT internationalization and firm-level internationalization. Accordingly, we hypothesize:

Hypothesis 2. The greater the firm's home-region institutional diversity, the weaker the relationship between TMT internationalization and firm-level internationalization.

2.4. Global focus

The second contingency that attenuates the relationship between TMT internationalization and firm-level internationalization is internal to the firm and corresponds to the firm's global focus, which refers to the firm's emphasis on markets outside the home region. While much recent IB research has focused on firms' preference for activities in their home regions (Banalieva and Dhanaraj, 2013; Banalieva et al., 2012; Osegowitsch and Sammartino, 2008; Rugman and Verbeke, 2004, 2008), scholars suggest that a global focus may lead to higher performance (Banalieva and Dhanaraj, 2013; Delios and Beamish, 2005; Elango, 2004). Yet research suggests that managers—even when faced with the prospect of higher performance—are often reluctant to expand into extra-regional markets due to the greater uncertainty managers associate with such environments (Delios and Beamish, 2005; Zaheer, 1995). Our initial hypothesis suggests that a more international TMT may alleviate this aversion by being more open to unfamiliar environments than a less international TMT. However, we expect that the positive association between TMT internationalization and firm-level internationalization will also vary depending on how extra-regional the firm's focus is.

Specifically, we expect a greater global focus to increase the likelihood that domestic TMT members' level of international attention and trust will be more similar to the one characterizing foreign TMT members. In contrast to the effects of home-region institutional diversity, which affects domestic TMT members' broader cognitive imprinting through social interactions in particular, global focus relates to a tolerance of foreignness (Levy et al., 2007) developed through the extra-regional experience of the firm (Athanassiou and Nigh, 2002; Kirca et al., 2012; Shrader et al., 2000; Tihanyi et al., 2000). Thus, when the firm's global focus is greater, domestic TMT members' international attention will be higher because their experience analyzing the firm's diverse activities outside the home region makes them more attentive to international sources of insight when taking strategic decisions (Maitland and Sammartino, 2015). Likewise, a global focus will be associated with higher levels of international trust among domestic TMT members because the greater geographic scope of the firm's operations engenders greater opportunities to cope with and develop trust for diverse partners from outside the home region of the firm. Thus, the greater the firm's global focus, the lower the disparity in tolerance for foreignness that exists between foreign and domestic TMT members, and, in turn, the lesser the marginal effect of a more international TMT on firm-level internationalization will be. Accordingly, we expect global focus to attenuate the relationship between TMT internationalization and firm-level internationalization, and hypothesize as follows:

Hypothesis 3. The greater the firm's global focus, the weaker the relationship between TMT internationalization and firm-level internationalization.

3. Methodology

3.1. Data sources and sample

For our sample, we took firms that were included in the 2013 and 2014 Fortune Global 500 (FG500). Fortune ranks the top 500 companies worldwide every year based on the previous year's revenues. We included two years' worth of data in order to increase our sample size in the face of data availability limitations (see below) and then added a third year for our operationalization of firm-level internationalization in order to incorporate lags in our regression models and test reverse causality. The majority of the FG500 are internationally operating firms, which makes the FG500 a highly relevant reference list of firms for the purpose of our study (cf. Aggarwal et al., 2011). We obtained the firm-specific data from ORBIS, a comprehensive database with information on companies worldwide provided by Bureau van Dijk, and data on TMT members from companies' annual reports and searching the internet.

It was impossible to retrieve complete data for the full FG500, as both information on the geographic distribution of sales and information on TMT members are not readily available for all firms. These sample limitations are in line with previous research that also focused on the geographic distribution of FG500 firms' sales (Rugman and Verbeke, 2004) or TMT composition (Greve et al., 2013). We describe a number of steps we took to account for these limitations as a potential source of bias below. After having excluded all companies with missing data, the final working sample ranged from 333 to 477 observations, depending on the variables used and the models specified.

3.2. Methodology

Through econometric analysis, we aimed to estimate the extent of *firm-level internationalization* based on *TMT internationalization*. In estimating such a model, potential endogeneity may be a concern as the decision to hire a foreign TMT member may be non-random and could therefore bias our results. To take into account such potential bias, we adopted a two-stage approach similar to that used by Elia et al. (2014) [cf. also Certo et al. (2016), Leiblein et al. (2002), Shaver (1998), and Wooldridge (2010)]. In the first stage, we estimated a probit model in which the dependent variable is the propensity to have at least one foreign TMT member versus having an entirely domestic TMT (*foreign TMT members*). The explanatory variables in this first-stage model were our set of controls with the ratio of female members to total members on the board of directors (*board female ratio*), which corresponds to our exclusion variable (see below for explanation).

This first stage allowed us to compute the inverse Mills ratio (*IMR*), which represents our selection parameter that we include in the second stage to account for potential selection bias and thus obtain consistent and unbiased coefficients. In the second stage, we ran an OLS regression with robust standard errors with *firm-level internationalization* as our dependent variable and *TMT internationalization* as the main explanatory variable to test our first hypothesis. Subsequently, we tested for the moderation effects of *institutional diversity* and *global focus* on the direct relationship between *TMT internationalization* and *firm-level internationalization* (Hypotheses 2 and 3, respectively).

Moreover, even though we theorize that TMT internationalization precedes firm-level internationalization, we cannot fully rule out the possibility that the composition of the TMT may be influenced by the firm's prior internationalization. To account for this issue, we introduced a one-year lag between our independent and dependent variables (Golovko and Valentini, 2011; Nielsen and Nielsen, 2013) so that TMT internationalization precedes the firm-level internationalization measures by one year. The introduction of a one-year lag is justified insofar as the previous year's composition of the TMT and, relatedly, its members' decisions about the firm's cross-border strategy likely affect the level of internationalization in a given year. Thus, we opted for this lag structure to ensure that our explanatory variable temporally precedes the dependent variable and circumvent problems with the causality of the relationship under scrutiny (Hambrick, 2007).

We also note here that although a multi-year data set and panel techniques might be desirable, the substantial difficulties in developing large data sets based on manual collection of data on individual TMT members are well known (e.g., Greve et al., 2013; Kaczmarek and Ruigrok, 2013; Schmid and Dauth, 2014). However, even with such limitations, we collected two years' worth of data so as to increase our sample size. In order to account for the lack of independence of observations at the firm level associated with pooling in this fashion, we followed previous research (e.g., Peeters et al., 2015) and used robust standard errors clustered at the firm level in both stages of our analysis. In the following sub-section, we present the variables employed in the two stages.

3.3. Measures

3.3.1. Dependent variable–first stage

To operationalize our dependent variable in the first stage, *foreign TMT members,* we constructed a dichotomous variable that scores 1 if there is at least one foreign member on the TMT and 0 otherwise.

3.3.2. Exclusion variable–first stage

The exclusion variable that appears in the first stage but not in the second is the ratio of female members to total members on the board of directors (*board female ratio*). This is a relevant and appropriate instrument because the board of directors is responsible for the appointment of TMT members but, as explained earlier, not directly involved in decisions related to firm-level internationalization. In particular, research suggests that a board of directors with more female members is likely to be more conducive to the appointment of international TMT members. For instance, an increased presence of females on the board has been shown to

promote a better understanding of the diversity related with firm's potential customers and employees (Campbell and Minguez Vera, 2010; Erhardt et al., 2003; Robinson and Dechant, 1997). In line with this notion, we expect that a higher proportion of females in the board increases the likelihood of hiring foreign TMT members. Building on prior research corroborating the notion that the boards' main tasks are monitoring and control rather than actual advising on strategic choices (Fama and Jensen, 1983; Monks and Minow, 1995; Rivas, 2012), there is no reason, *ex ante*, to expect a significant relationship between the proportion of females in the board and the extent of firm-level internationalization. This is confirmed in our setting, as *board female ratio* is significantly correlated with *foreign TMT members* (0.29), but not with *firm-level internationalization* (−0.05).

3.3.3. Dependent variable–second stage

To operationalize our dependent variable in the second stage, *firm-level internationalization*, we relied on two measurements in order to thoroughly explore the nuances of firms' international expansion (Oxelheim et al., 2013). The first is the ratio of foreign sales to total sales (*firm-level internationalization [sales]*), where foreign sales include both sales generated via export as well as sales made by the international equity affiliates of the focal company (Aggarwal et al., 2011; Almodovar and Rugman, 2014; Carpenter, 2002; George et al., 2005; Hennart, 2011; Sullivan, 1994). The second is the ratio of international majority-owned affiliates to total majority-owned affiliates (*firm-level internationalization [affiliates]*), based on the notion that internationalization is not only sales-based, but may also be equity-based. This second operationalization builds upon earlier IB research that focused on the distribution of equity affiliates as a key metric to classify the extent of internationalization of multinational corporations (Aggarwal et al., 2011). For this second measure, we constructed a dataset composed of over 137,000 data points covering the majority-owned affiliates (both national and international) of all companies included in the 2013 and 2014 FG500 lists.

3.3.4. Independent variable–second stage

Our independent variable of interest is the degree of internationalization of the TMT (Hypothesis 1). Firms, and more specifically their boards of directors, appoint the members of the TMT, which refers to the top-tier executives listed in the company's annual report (Kaczmarek and Ruigrok, 2013; Nielsen and Nielsen, 2013). In our analysis, we excluded the CEO from our operationalization of the TMT to be able to control for the specific impact of a foreign CEO as suggested in recent research (Ghemawat and Vantrappen, 2015). In our study, we focus on the distinction between domestic and foreign TMT members (Greve et al., 2015). Thus, the variable *TMT internationalization* corresponds to the ratio of the number of foreign members to total members of the TMT. We determined the TMT members' nationality through annual reports or other reliable secondary sources, such as the company's official website.

While we acknowledge that our measurement of TMT internationalization does not directly capture the differences in cognition between foreign and domestic TMT members highlighted in our hypothesizing, such indirect measures are the norm in upper echelons research. For instance, in one of the most influential contributions to this literature (Nielsen and Nielsen, 2013) the authors theorize and find empirical evidence for the notion that a greater TMT nationality diversity leads to improved firm performance. Nielsen and Nielsen (2013) base their theorizing on the argument that a larger number of nationalities in the TMT brings along a wider knowledge of and experiences of different institutional environments that is key to improve decision processes of complex tasks and arrive at more innovative solution and operationalize their key explanatory variable by counting the number of different nationalities represented in a given TMT. In keeping with Nielsen and Nielsen's (2013) approach, we operationalize our main construct by counting the number of foreigners in a given TMT, based on the logic that foreignness is accompanied by systematic differences in cognitive frames as highlighted in our theorizing.

3.3.5. Moderators–second stage

The *institutional diversity* of the firm's home-region environment is our first moderator (Hypothesis 2). To operationalize this variable, we drew from earlier work by Banalieva and Dhanaraj (2013) and measured it at the home-region level through the Fraser Index of Economic Freedom of the World. The index is composed of several other sub-indexes: government, legal, economic, and regulatory (Gwartney et al., 2013). First, we divided the countries from the Fraser index into categories corresponding to their home regions as denoted by the United Nations' geographic-based country mappings (Banalieva and Dhanaraj, 2013; see Appendices A and B for complete listings). Next, we computed the coefficient of variation of the Fraser index for the home region of the firm by excluding its home country. The coefficient of variation is the standard deviation of the distribution divided by its mean (Banalieva and Dhanaraj, 2013). The higher the values of the coefficient are, the higher the diversity in the institutional environment of the focal firm. The firm's *global focus* is our second moderating variable (Hypothesis 3). We operationalized this variable using the ratio of foreign sales outside of the home region to total sales, based on prior empirical research (Banalieva et al., 2012; Oh and Rugman, 2014; Rugman and Verbeke, 2004, 2007, 2008).

3.3.6. Controls–first and second stages

We included a number of firm-level control variables in our analysis. *TMT size* corresponds to the number of key executives that are members of the executive board (Carpenter, 2002). We gathered the information on the size of the TMT from the firm's annual report. We also included a dichotomous variable that takes a value of 1 if the CEO is a foreigner and 0 otherwise to control for the specific impact of a foreign versus domestic CEO (*foreign CEO*).

Additionally, we accounted for firm size, as larger firms are more prone to international activity and may have more resources to deal with host-country uncertainties (Laufs and Schwens, 2014). We used gross annual revenue in millions of U.S. dollars to measure the size of the firm. In this study, we used the logarithm of the variable in order to account for skewness in the data (*firm size*). An additional control is *firm experience*. We used the number of years since the firm was founded until the corresponding year of

Table 1
Operationalization of variables in the models.

Variable	Operationalization
Dependent–First stage	
Foreign TMT members	A dummy variable indicating whether in the TMT at least one member is a foreigner (1 = Yes; 0 = No)
Exclusion–First stage	
Board female ratio	Total number of female members on the board of directors over total number of members
Dependent–Second stage	
Firm-level internationalization (sales)	Foreign sales divided by total sales (FS/TS) (Foreign sales equals sales generated via exporting plus sales made by foreign affiliates)
Firm-level internationalization (affiliates)	Total number of international majority-owned affiliates over total number of majority-owned affiliates
Independent–Second stage	
TMT internationalization	Total number of foreign TMT members over total number of members
Moderators–Second stage	
Global focus	Foreign sales outside of the home region divided by total sales (GS/TS)
Institutional diversity	We measured the regional institutional diversity using the coefficient of variation of the Fraser Index across the home region of the focal company, excluding the focal firm's home country. The Institutional diversity variable is the coefficient of variation which corresponds to the standard deviation of the distribution divided by its mean.
Control	
TMT size	Number of members of the top management team
Foreign CEO	A dummy variable indicating whether the CEO of the company is a foreigner (1 = Yes; 0 = No)
Firm size	Natural logarithm of the number of employees
Firm experience	Number of years of existence, from inception until the fiscal year of reference
Firm performance	Net income over total assets (ROA) (%)
Foreign listing	A dummy variable indicating whether the firm is listed in a stock market outside its home country (1 = Yes; 0 = No)
State ownership	A dummy variable indicating whether the company is state-owned (1 = Yes; 0 = No)
Industry dummies	Industry dummies corresponding to 5 highly represented industries in the sample
Home country dummies	Country dummies corresponding to 6 highly represented home countries in the sample

reference, to proxy the experience accumulated by the firm (Miller, 1991). Next, research suggests firm-level internationalization relates to firm performance, as firms that perform well have the necessary resources to expand internationally (Geringer et al., 1989; Hitt et al., 1997; Kim et al., 1989). *Firm performance* is operationalized as return on assets (ROA) for the corresponding fiscal year.

We also controlled for whether the focal company was listed on a stock market outside its home country to account for the relative ability of companies listed abroad to attract capital and thus enhance their international presence (*foreign listing*). We included another dichotomous variable, *state ownership*, to control for the fact that some of the companies included in our sample are state-owned enterprises, given that recent research has shown that such companies internationalize differently (Cuervo-Cazurra et al., 2014). Another set of control variables is at the industry level, as firms from different types of industries can have distinct reasons to expand internationally and thus behave differently. To account for this heterogeneity in our sample, we included five industry dummies (machinery, wholesale, chemicals, banks, and insurance). Lastly, to account for potential country-level differences, we included country dummies for the six largest countries in terms of the number of firms on the FG500 lists (U.S., China, Japan, France, Germany, and U.K.) associated with the country of origin of the focal firm; i.e., where its headquarters are located. Table 1 provides an overview of the variables we used in the empirical analysis and their operationalization.

4. Results

Table 2 contains the descriptive statistics and the pairwise correlations between the variables (omitting the industry and home-country dummies). We examined Variance Inflation Factors (VIFs) to assess potential multicollinearity. The VIFs values are all well below the severest limit of 5.3 proposed by Hair et al. (1998). Thus, we do not expect issues of multicollinearity to affect our results.

4.1. Main analysis

Table 3 reports the results of our first- and second-stage analyses. Model 1 corresponds to our first-stage (i.e., selection) model. The results obtained show that board female ratio is a significant predictor of a firm's likelihood of hiring one or more foreign TMT members. The positive and significant coefficient illustrates that, all else equal, firms whose boards of directors have a higher proportion of females are more likely to have foreigners on their TMT.

Models 2–5 correspond to our second-stage analysis. First, we observe that the coefficient associated with the inverse Mills ratio (*IMR*), which we included as a control variable in all our second-stage models, is not significant in any of the specifications used. This is an important result as the absence of any statistical significance of this coefficient corroborates the notion that potential selection bias associated with the choice of hiring a foreign TMT member does not affect our results. Models 2 and 3 are specified with *firm-level internationalization (sales)* as the dependent variable, whereas Models 4 and 5 are specified with *firm-level internationalization*

Table 2
Pairwise correlations among variables.

		N	Mean	Std. dev.	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Firm-level internat. (sales)	1	333	0.53	0.29	0.00	1.00	1.00													
Firm-level internat. (affiliates)	2	477	0.51	0.28	0.00	1.00	0.74*	1.00												
TMT internationalization	3	664	0.16	0.24	0.00	1.00	0.43*	0.50*	1.00											
Foreign TMT members	4	664	0.48	0.50	0.00	1.00	0.32*	0.39*	0.69*	1.00										
Board female ratio	5	664	0.15	0.11	0.00	0.55	−0.05	0.07	0.11*	0.29*	1.00									
Global focus	6	477	0.35	0.26	0.00	1.00	0.79*	0.60*	0.45*	0.38*	0.03	1.00								
Institutional diversity	7	664	0.10	0.03	0.06	0.13	−0.37*	−0.34*	−0.41*	−0.40*	−0.35*	−0.24*	1.00							
TMT size	8	664	9.98	4.78	1.00	43.00	−0.05	0.04	0.09*	0.15*	0.06	0.08*	0.10*	1						
Foreign CEO	9	664	0.14	0.35	0.00	1.00	0.26*	0.31*	0.66*	0.40*	0.02	0.34*	−0.25*	0.02	1.00					
Firm size	10	664	8.42	3.24	3.04	14.07	0.03	0.01	0.01	0.06	−0.07	0.04	−0.06	0.18*	0.01	1.00				
Firm experience	11	664	67.56	54.73	1.00	348.00	0.11*	0.11*	0.05	0.15*	0.18*	0.10*	−0.18*	0.09*	−0.02	0.01	1.00			
Firm performance	12	664	5.13	6.52	−22.33	44.72	0.06	0.08*	0.10*	0.07	0.11*	0.17*	0.03	0.09*	0.11*	0.04	−0.08*	1.00		
Foreign listing	13	664	0.50	0.50	0.00	1.00	0.27*	0.21*	0.23*	0.24*	0.10*	0.15*	−0.24*	0.05	0.19*	0.04	0.07	−0.02	1.00	
State ownership	14	664	0.11	0.31	0.00	1.00	−0.16*	−0.14*	−0.08*	−0.12*	−0.02	−0.16*	0.10*	−0.06	−0.08*	0.06	−0.04	0.09*	0.02	1.00

* $p < 0.10$.

Table 3
TMT internationalization and firm-level internationalization.

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	First stage - Probit		Second stage - OLS		Second stage - OLS		Second stage - OLS		Second stage - OLS	
	DV: Foreign TMT members		DV: Firm-level internationalization (sales)		DV: Firm-level internationalization (sales)		DV: Firm-level internationalization (affiliates)		DV: Firm-level internationalization (affiliates)	
	Coefficient	s.e.	Coefficient	s.e.	Coefficient	s.e.	Coefficient	s.e.	Coefficient	s.e.
Explanatory variables										
Board female ratio	2.83***	0.74								
TMT internationalization			0.42***	0.07	0.42**	0.16	0.45***	0.07	0.73***	0.19
Moderating variables										
Institutional diversity					−1.14	0.86			1.67*	0.88
Global focus					0.83***	0.05			0.54***	0.06
Interaction terms										
Institutional diversity x TMT internationalization					−0.28	1.63			−3.16*	1.85
Global focus × TMT internationalization					−0.54**	0.19			−0.39*	0.20
Control variables										
TMT size	0.04**	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Foreign CEO	1.98***	0.33	0.10	0.06	0.05	0.04	0.03	0.06	−0.02	0.05
Firm size	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Firm experience	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Firm performance	−0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Foreign listing	0.47**	0.14	0.11**	0.04	0.05**	0.02	0.03	0.03	0.01	0.03
State ownership	−0.43	0.30	−0.24**	0.09	−0.10	0.08	−0.15**	0.07	−0.09	0.07
Industry dummies	Included		Included		Included		Included		Included	
Home country dummies	Included		Included		Included		Included		Included	
IMR			0.13	0.08	0.02	0.05	0.07	0.07	−0.01	0.06
Constant	−1.27***	0.29	0.27**	0.13	0.33**	0.10	0.37**	0.11	0.19*	0.11
Number of observations	664		333		333		477		477	
Wald chi2	177.16***									
Pseudo R-squared	0.37									
F value			20.24***		65.10***		15.27***		20.36***	
R-squared			0.47		0.78		0.40		0.53	

* $p < 0.10$.
** $p < 0.05$.
*** $p < 0.001$.

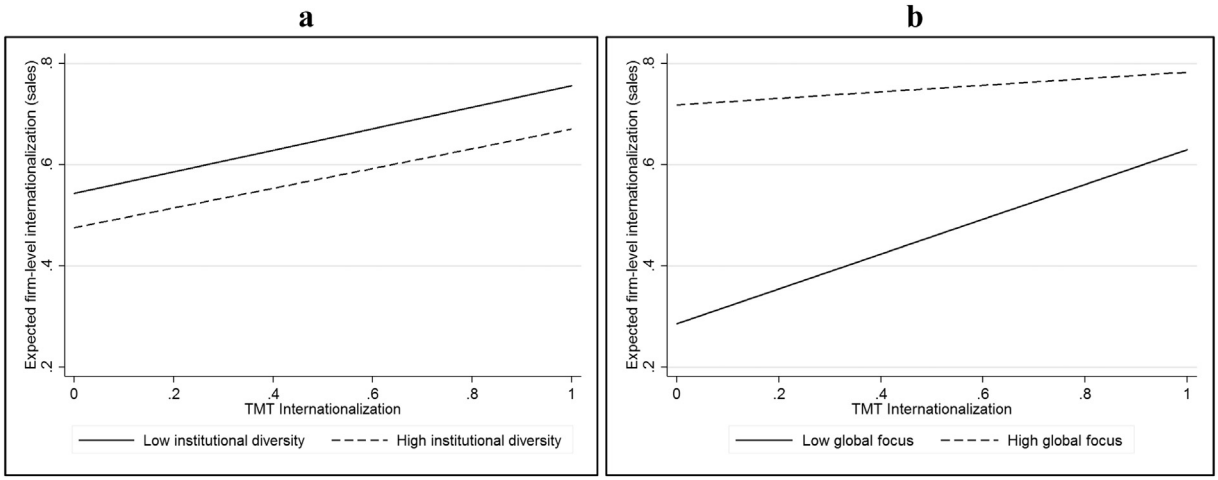

Fig. 1. Average marginal effects of TMT internationalization on firm-level internationalization of sales and the interaction with institutional diversity and global focus.

(affiliates) as the dependent variable.

Models 2 and 4 thus test the direct positive relationship suggested in our first hypothesis. In both models, the coefficient of *TMT internationalization* is positive and significant, providing support for the hypothesis that a more international TMT drives greater firm-level internationalization. Models 3 and 5 correspond to our fully specified model in which we tested the moderating effects of *institutional diversity* and *global focus*. To do so, we included both our moderating variables, as well as their interaction terms with *TMT internationalization*. Looking at the hypothesized negative moderating effect of *institutional diversity* (Hypothesis 2), our results illustrate that it is not significant when considering *firm-level internationalization (sales)* as the dependent variable (Model 3), but is significant when the dependent variable is *firm-level internationalization (affiliates)* (Model 5). Thus, we find empirical support for Hypothesis 2 only in relation to the firm's international distribution of majority-owned affiliates. Focusing on the moderation hypothesized in Hypothesis 3, the interaction term between *global focus* and *TMT internationalization* is significant and negative in both Model 3 and Model 5, which supports the hypothesized negative moderation of global focus on the relationship between TMT internationalization and firm-level internationalization.

To better visualize these interaction effects, we plotted the results of our interaction tests in Fig. 1a and b below. Specifically, for Fig. 1a we plotted the average marginal effects of *TMT internationalization* on the full range of *firm-level internationalization (sales)* (Model 3 in Table 3) and calculated these effects at −1 and +1 standard deviations of *institutional diversity* (corresponding to a low and a high *institutional diversity*, respectively). Fig. 1b visualizes the interaction effects of our other moderating variable *global focus*, where we calculated the average marginal effects of *TMT internationalization* on the full range of *firm-level internationalization (sales)* (Model 3 in Table 3) at −1 and +1 standard deviations of *global focus* (corresponding to a low and a high *global focus*, respectively).

Fig. 1a shows that *institutional diversity* has no moderating effect on the underlying relationship when we consider *firm-level internationalization (sales)* as the dependent variable. Fig. 1b shows that when companies have a low *global focus*, the positive relationship between *TMT internationalization* and *firm-level internationalization (sales)* is stronger than when companies have a high *global focus*. Specifically, over the full range of TMT internationalization, firms with a low global focus see an increase in firm-level internationalization from around 30% to over 60%, while firms with a high global focus remain at about 75%.

In Fig. 2a and b, we visualize the results of our affiliate-based operationalization of firm-level internationalization. We plotted the average marginal effects of *TMT internationalization* on *firm-level internationalization (affiliates)* from Model 5 and calculated them at one standard deviation above and below the mean values of our moderating variables *institutional diversity* and *global focus* (Fig. 2a and b, respectively). Fig. 2a shows that when restricting our attention to the internationalization of majority-owned affiliates, institutional diversity negatively moderates the underlying relationship between TMT internationalization and firm-level internationalization. Firms with low levels of home-region institutional diversity experience an increase in firm-level internationalization of 40 percentage points (0.4 to 0.8) over the full range of TMT internationalization, compared to an increase of 20 percentage points (0.5 to 0.7) for firms with high levels of home-region institutional diversity. Fig. 2b shows a very similar pattern to the one shown in Fig. 1b in relation to the global focus.

4.2. Additional analyses

To check the robustness of our findings, we performed a number of additional analyses. First, although we theorize specifically on the foreignness of TMT members, we recognize that previous studies have emphasized the potential importance of heterogeneity (Kaczmarek and Ruigrok, 2013; Nielsen and Nielsen, 2011, 2013). Therefore, to test the distinctiveness of our foreignness-based TMT construct, we repeated our analysis using a Blau Index measurement (Blau, 1977) to capture TMT diversity (Kaczmarek and Ruigrok, 2013; Nielsen and Nielsen, 2011, 2013). In keeping with our emphasis on the importance of dynamics at the regional boundary, we constructed a Blau Index that measures the degree of TMT regional diversity. We calculated this regional Blau Index (named *TMT*

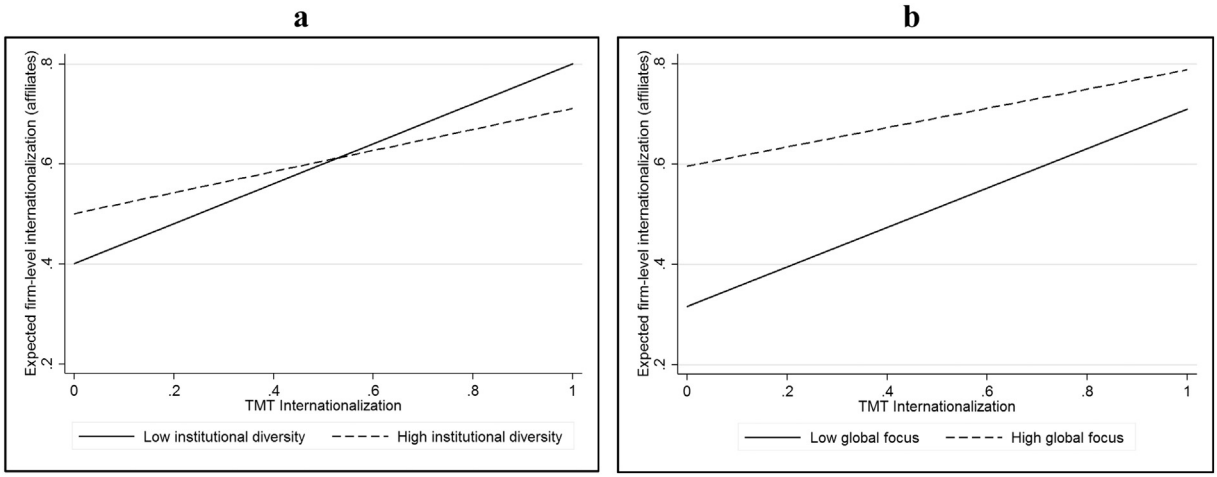

Fig. 2. Average marginal effects of TMT internationalization on firm-level internationalization of affiliates and the interaction with institutional diversity and global focus.

regional diversity) by applying the formula $B = [1 - \Sigma(p_i)^2]$, where *p* is the percentage of members in the *i*th region (cf. Carpenter, 2002; Finkelstein and Hambrick, 1996; Nielsen, 2010). The higher the value of B is, the higher the regional diversity of the TMT. Table 4 reports the results of the second-stage analysis undertaken using *TMT regional diversity* as our main independent variable in the second stage (the first stage is equivalent to the one reported in Table 3).

When focusing on our sales-based operationalization of firm-level internationalization, our findings show no significant effects of *TMT regional diversity*. Specifically, in contrast to the findings in Table 3, Model 1 in Table 4 shows that neither the main effect of *TMT*

Table 4
Additional analyses.

Variables	Model 1		Model 2	
	Second stage - OLS		Second stage - OLS	
	DV: Firm-level internationalization (sales)		DV: Firm-level internationalization (affiliates)	
	Coefficient	s.e.	Coefficient	s.e.
Explanatory variable				
TMT regional diversity	−0.02	0.23	0.76**	0.25
Moderating variables				
Institutional diversity	−1.19	0.86	1.52*	0.87
Global focus	0.77***	0.06	0.47***	0.07
Interaction terms				
Institutional diversity x TMT regional diversity	0.34	1.80	−6.00**	1.99
Global focus × TMT regional diversity	0.04	0.24	−0.06	0.25
Control variables				
TMT size	0.00	0.00	0.00	0.00
Foreign CEO	0.06	0.04	0.02	0.05
Firm size	0.00	0.00	0.00	0.00
Firm experience	0.00	0.00	0.00	0.00
Firm performance	0.00	0.00	0.00	0.00
Foreign listing	0.05*	0.02	0.00	0.03
State ownership	−0.10	0.08	−0.08	0.07
Industry dummies	Included		Included	
Home country dummies	Included		Included	
IMR	0.00	0.05	−0.04	0.06
Constant	0.41***	0.11	0.30**	0.11
Number of observations	333		477	
F value	58.46***		21.41***	
R-squared	0.76		0.51	

* $p < 0.10$.
** $p < 0.05$.
*** $p < 0.001$.

regional diversity nor the moderating effect of *global focus* is significant. These findings suggest that the effects we captured in our analysis are attributable to foreignness and not diversity per se, at least when looking at firms' internationalization of sales. When considering our affiliate-based operationalization of internationalization, however (Model 2 in Table 4), the results suggest that the effects posited in Hypotheses 1 and 2 (but not Hypothesis 3) also apply to a heterogeneity-based conceptualization of TMT internationality.

These results highlight the importance of distinguishing between TMT internationalization as defined in our study and the previously used constructs associated with the diversity of nationalities represented in the TMT. The findings we obtained in our robustness analysis suggest that there are important differences in the relationship between these two constructs and firm-level internationalization and thus corroborate the importance of considering foreignness, and the cognitive influences this may bring to bear on the TMT, when assessing the drivers of firms' internationalization. Moreover, our results indicate that the global focus contingency our study considers has a different influence on these relationships. Specifically, whereas global focus appears to have a strong moderating influence on the relationship between TMT- and firm-level internationalization, it does not have an impact on the association between TMT regional diversity and firm-level internationalization. Thus, our findings suggest that a more international TMT has the greatest effect on firm-level internationalization when the company has a relatively limited geographic scope, i.e., its global focus is low.

To corroborate the robustness of our results in light of the high correlation between *global focus* and *firm-level internationalization (sales)* (0.79), we constructed a dichotomous variable (*dummy global focus*) that scores 1 if the *global focus* is at least 0.5 and 0 otherwise. As expected, the pairwise correlation between *dummy global focus* and *firm-level internationalization (sales)* is relatively lower (0.59). We repeated Models 1–5 (as reported in Table 3) and the results we obtained are fully consistent with those reported in Table 3. As in our primary analysis, when using *dummy global focus,* we find empirical support for Hypotheses 1 and 3 but we cannot confirm Hypothesis 2 when using our affiliate-based operationalization of firm-level internationalization (p-value = 0.12). Thus, we can conclude the results obtained here corroborate those reported in Table 3. That said, future research could use alternative measures of a firm global focus—for instance by looking at the country of origin of its employees—to further validate the relationships observed in our study.

Another important robustness issue is associated with a potential sample selection bias due to the fact that company information, especially in relation to the geographic distribution of sales and the composition of the TMT, is not always available. As discussed in the methodology section, this significantly reduced the size of our working sample. If missing values are non-random, i.e., that unobservable variables determine the data availability, our empirical findings may be biased due to sample selection.

To address the potential selection bias in our analysis, we followed common procedure (e.g., Oxelheim et al., 2013) and used Heckman's (1979) two-stage estimation procedure. In the first stage, we estimated the selection equation as follows. For our dependent variable, we used a dummy that specifies whether the data for the given company was available and thus allowed for its inclusion (*dummy included*). The set of control variables, as included in Model 1 (Table 3), corresponds to the set of explanatory variables for the first stage. In this first stage, similarly to the choice made by Oxelheim et al. (2013), we used a dummy as our main exclusion variable that scores 1 when ORBIS and/or the specific company annual report provide complete information on the board composition of the focal company and 0 otherwise (*dummy complete board info*). We expected this dummy to be related to the availability of exhaustive information on the TMT composition and not related to the overall internationalization degree of the company, thus satisfying the exclusion restriction of Heckman's (1979) two-stage estimation procedure. In the second stage, we used the same dependent and independent variables included in our full specification model (respectively Models 3 and 5 in Table 3) and added the vector of inverse Mills ratio (*IMR*) from the selection equation estimated in the first stage. The results obtained correspond completely with those obtained without this correction and thus offer strong evidence that our results do not suffer from sample selection bias.

As a last robustness test to exclude the possibility of reverse causality, we regressed *TMT internationalization* (at time t) on *firm-level internationalization (sales)* (at time t-1). The results obtained show that the coefficient of *firm-level internationalization (sales)* is not significant and thus provides further (Granger causal) evidence that TMT internationalization precedes firm-level internationalization, and not vice versa.

5. Discussion and conclusion

Numerous studies have taken an upper echelons perspective to explain organizational outcomes, focusing on factors such as TMT size, age, tenure, education levels, and international experience (Carpenter et al., 2001, 2003; Rivas, 2012; Sambharya, 1996; Sanders and Carpenter, 1998; Tihanyi et al., 2000). Only a handful of studies have investigated TMT characteristics in relation to firm-level internationalization specifically, and those that have tend to emphasize heterogeneity-based arguments such as those associated with diverse experience and knowledge. Yet the findings with respect to heterogeneity are mixed and inconclusive (Carpenter and Fredrickson, 2001; Kirca et al., 2012), possibly due to the fact that research in this context typically does not specify the source of the heterogeneity in question (Barkema and Shvyrkov, 2007).

A parallel body of research focusing on managerial cognition has highlighted the key role cognitive frames play in promoting a cosmopolitan attitude towards the world, using terms such as “global mindset” (Levy et al., 2007: 231), to capture managers' ability to succeed in an increasingly culturally diverse environment (Kim et al., 2015; Johnson et al., 2006; Levy et al., 2007; Shapiro et al., 2008). However, by only considering managerial cognition in parallel to internationalization, i.e., “as firms globalize” (Levy et al., 2007: 233), these studies have tended to take internationalization as a given feature of the firm's context instead of as an outcome of TMT-level strategic decisions.

In this study, we link these streams of research to argue that the TMT's overall level of foreignness is an important, yet overlooked, driver of firm-level internationalization. By self-selecting into non-temporary foreign employment, foreign TMT members are by nature less likely than their domestic counterparts to see borders as obstacles or foreign markets as risky. We posit that this cognitive tolerance of foreignness translates into two mechanisms that facilitate the international expansion of the firm: higher levels of international attention and higher levels of international trust. Accordingly, we hypothesize that the more international the TMT, the more prevalent the two aforementioned mechanisms will be and, in turn, the higher the firm's level of internationalization. In addition, we consider two contingencies conceptualized in reference to the home region—one firm-external and the other firm-internal—that we expect attenuate this relationship: home-region institutional diversity and firm global focus. An analysis of companies from the 2013 and 2014 FG500 listings provides support for our hypotheses.

Our research contributes to IB scholarship in two important ways. First, our study extends the upper echelons literature by explicating the role of foreignness in the TMT as a driver of firm-level internationalization. Whereas prior studies have focused on a number of TMT characteristics in relation to firm-level internationalization and typically emphasized heterogeneity-based arguments in their theorizing, no known research has considered the cognitive mechanisms associated with TMT's overall degree of foreignness in relation to firm-level internationalization. At the same time, research taking a cognitive perspective more generally has tended to view internationalization as an exogenous contextual factor (Levy et al., 2007). By highlighting the role of cognitive tolerance for foreignness associated with self-selecting into a TMT overseas and subsequent effects on TMT-level international attention and trust, our study responds to the call for more research on the cognitive foundations of firms' internationalization (Maitland and Sammartino, 2015) and contributes to a greater understanding of the TMT's role in such process. Thus, our results may help to explain the mixed findings obtained in prior works that have focused on heterogeneity-based arguments (Carpenter and Fredrickson, 2001; Kirca et al., 2012; Rivas, 2012; Tihanyi et al., 2000). Future studies could explore more directly the cognitive frames associated with TMT internationalization and how these frames contribute to team-level strategic decision making, as well as how these frames may evolve over time or work differently depending on the type of internationalization the firm pursues.

Second, we build on the notion that the disparity between foreign and domestic TMT members' cognitive tolerance of foreignness can vary depending on the intra- and extra-regional international experience domestic TMT members have accumulated. As prior research has highlighted the importance of both intra- and extra-regional considerations in international strategy, we examine regional-level contingencies that may have an impact on the cognitive mechanisms underlying the relationship between TMT internationalization and firm-level internationalization. More specifically, our results indicate that the association is weaker when the firm's home region is institutionally more diverse and the firm's focus more extra-regional. Future research could explore these effects more directly, as there may be other contingencies that moderate the relationship between TMT internationalization and firm-level internationalization. For instance, even given their “psychological mobility” (Zikic et al., 2010: 668), managers may find themselves in contexts that are institutionally too different or even hostile to migrants, whereby a larger presence of foreigners on the TMT may actually prompt actions against rather in favor of the firm's international expansion. Additionally, scholars might explore how the contingencies theorized here affect specific strategic decisions related to international expansion, such as the choice of entry modes.

The present study also entails a number of insightful managerial implications. For instance, multinational companies that want to further their international expansion can increase the cognitive tolerance of foreignness among the TMT by hiring more foreign TMT members. Additionally, companies from regions with limited institutional diversity and characterized by a limited global focus can benefit the most from enhancing the internationalization of their TMTs. By leveraging the greater openness to foreignness associated with foreign nationals in their TMTs, these companies can facilitate their expansion abroad.

This study also has limitations. First, we acknowledge that our TMT internationalization measurement does not directly capture the differences in cognitive tolerance of foreignness that are central to our theorizing. The inability to capture cognition directly is a common issue in upper echelons research. However, we believe that the proportion of foreign to total TMT members represents a reasonable proxy for the cognitive and behavioral features we discussed in our hypothesis development, in the same way prior research has suggested that a higher education level proxies greater openness to change and innovation (Carpenter and Fredrickson, 2001; Kirca et al., 2012; Nielsen and Nielsen, 2013). Having said that, future research could develop measurements that more closely capture the cognitive tolerance of foreignness of TMT members so as to further our understanding of its specific role on the international expansion of the firm.

Second, although foreignness is an important construct, other factors also can influence the cognitive frames of the TMT. Some of these factors may relate to psychological traits linked to specific nationalities, which we do not emphasize here. For instance, the specific environment individuals grow up in or whether their parents have different nationalities can have an impact on the creation of specific cognitive structures. Thus, future studies could go even further in the micro-level assessment of TMT members' cognitive frames and their role in the formulation and execution of firms' strategies. Additionally, our focus on the cognitive frames of individuals within TMTs leaves research avenues open for exploration of the group-level dynamics and decision-making processes, such as those related to the identification of overseas opportunities, within the TMT (cf. Maitland and Sammartino, 2015). Finally, even though we control for differences in firm size, we acknowledge that our study focused exclusively on large firms as a function of taking the Fortune Global 500 as a sample. Given the known peculiarities characterizing the internationalization of small- and medium-sized enterprises (Laufs and Schwens, 2014), future research could examine whether our results hold when considering relatively smaller firms than FG500 companies. Thus, our study on the link between internationalization of the TMT and internationalization of the firm offers fruitful avenues for future research.

Appendix A. United Nations' country groupings

Asia and Oceania	Europe	Americas	Other
Armenia	Albania	Argentina	Algeria
Australia	Austria	Bahamas	Angola
Azerbaijan	Belgium	Barbados	Benin
Bahrain	Bosnia & H.	Belize	Botswana
Bangladesh	Bulgaria	Bolivia	Burkina Faso
China	Croatia	Brazil	Burundi
Cyprus	Czech Rep.	Canada	Cameroon
Fiji	Denmark	Chile	Central Afr. Republic
Georgia	Estonia	Colombia	Chad
Hong Kong	Finland	Costa Rica	Congo, Dem. Republic
India	France	Dominican Rep.	Congo, Rep. Of
Indonesia	Germany	Ecuador	Cote d'Ivoire
Iran	Greece	El Salvador	Egypt
Israel	Hungary	Guatemala	Ethiopia
Japan	Iceland	Guyana	Gabon
Jordan	Ireland	Haiti	Ghana
Kazakhstan	Italy	Honduras	Guinea-Bissau
Korea, South	Latvia	Jamaica	Kenya
Kuwait	Lithuania	Mexico	Lesotho
Kyrgyzstan	Luxembourg	Nicaragua	Madagascar
Malaysia	Macedonia	Panama	Malawi
Mongolia	Malta	Paraguay	Mali
Myanmar	Moldova	Peru	Mauritania
Nepal	Netherlands	Trinidad & Tobago	Mauritius
New Zealand	Norway	United States	Morocco
Oman	Poland	Uruguay	Mozambique
Pakistan	Portugal	Venezuela	Namibia
Papua New Guinea	Romania		Niger
Philippines	Russia		Nigeria
Singapore	Slovak Rep		Rwanda
Sri Lanka	Slovenia		Senegal
Syria	Spain		Sierra Leone
Taiwan	Sweden		South Africa
Thailand	Switzerland		Tanzania
Turkey	Ukraine		Togo
UAE	United Kingdom		Tunisia
Vietnam			Uganda
			Zambia
			Zimbabwe

Source: Banalieva and Dhanaraj (2013)

Appendix B. Description of the Fraser Index

Sub-index	Area 1: Government	Area 2: Legal	Areas 3 and 4: Economic	Area 5: Regulatory
Objective	Captures size of government: expenditures; taxes, and enterprises.	Captures legal systems and property rights.	Captures access to sound money and freedom to trade internationally.	Captures the regulation of credit, labor and business.

Criteria	General government consumption spending; transfers and subsidies; government enterprises and investment; top marginal tax rate.	Judicial independence; impartial courts; property rights protection; military interference in rule of law and politics; integrity of the legal system; legal enforcement of contracts; regulatory restrictions on the sale of real property.	Money growth; inflation; freedom to own foreign bank accounts; tarrifs; regulatory trade barriers; black market exchange rates; international capital market controls.	Credit market regulations; labor market regulations; business regulations.
Range	0–10, with higher values meaning better government quality.	0–10, with higher values meaning better legal quality.	0–10, with higher values meaning better economic quality.	0–10, with higher values meaning better regulatory quality.

Source: Gwartney et al. (2013).

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