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The impact of market size on new market entry: a contingency approach

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Abstract

Purpose – The purpose of this study is to offer explanations of the wide variation in the impact of market size on new market entry decisions – i.e. its positive impact lessens because of unreliable predictability of market size on post-entry profit and entry motivations other than post-entry profit.

Design/methodology/approach – On the basis of the two explanations, this paper builds a contingency frame that the impact of market size on new market entry depends on entry-context-specific variables. It validates the contingency frame, empirically analyzing 219 parameter estimates of the impact of market size on market entry obtained from 41 existing empirical studies.

Findings – The meta-analysis results reveal that the entry-context-specific variables used in this study – niche market entry, high-tech market entry, entry by industry incumbent firms and the year of market entry – notably moderate the impact of market size on new market entry decisions, as the research frame suggests.

Research limitations/implications – This study examines the various literature and study outcomes in the areas of marketing, economics and strategy to elucidate whether and when market size is a critical driver of new market entry. In most cases, the greater the new market size, the greater is the propensity to enter the market. However, the contingency arguments stated in this paper suggest that firms may and do enter a new market even if the market size is not large at the time of entry.

Originality/value – This paper enhances the understanding of the relative importance of market size in market entry decisions, which depend on various entry contexts. It clarifies the direction and magnitude of the impact of such entry contexts.

Keywords Marketing strategy, Market entry, Market size

Paper type Research paper

1. Introduction

Previous studies on new market entry note that market size should be one of the most important factors to consider in new market entry decisions, as market size reflects the market's post-entry profit potential for entrants (Combe, 2012; Geroski, 1995; Gort and

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Klepper, 1982; Rodríguez-Pinto *et al.*, 2007; Thomas, 1987). Furthermore, the entry barrier theory also alleges that the expected market size has a positive impact on market entry decisions. The argument is that, as the expected market size increases, potential entrants perceive the market's entry barriers to be progressively lower, because the larger potential market size offers entrants better opportunities for economies of scale, differentiation and absolute cost advantages (Bain, 1956; Bond and Houston, 2003; Sutton, 1991).

However, despite such positive theoretical assertions, the empirical studies regarding the impact of market size on new market entry have so far provided non-convergent and sometimes contradictory results. Although numerous studies have found empirical evidence for large market size as a major incentive for firms to enter new markets (Baum and Korn, 1996; Damar, 2009; Feinberg, 2008; Swaminathan, 1998), many other empirical findings also show a weak or insignificant impact of market size on new market entry decisions (Bronnenberg and Mela, 2004; Chesbrough, 2003).

Regarding these inconclusive and seemingly conflicting results concerning the effects of market size on entry decisions, the literature generally explains the link between market size and market entry as a "size of the pie" versus a "share of the pie" problem. That is, a large market size alone does not translate to large profits, because profit depends on value extraction, such as how much market share a firm obtains in a market of any given size and the price margins in the market (Asplund and Nocke, 2006; Bayus *et al.*, 2007; Sutton, 1991; Thomas, 1987). According to this reasoning, the degree of association between market size and post-entry profit may vary across different competitive situations, which eventually causes variations in the relationship between market size and the likelihood of new market entry.

On the other hand, a more recent study on firms' new market entry motivations by Kim *et al.* (2015) argues that firms enter a new market not necessarily for post-entry profits but for indirect or long-term benefits such as exploiting their owned resources/experiences (Helfat and Lieberman, 2002; King and Tucci, 2002; Mitchell, 1989) or complementing their current product lines with the new market demands (Chen and MacMillan, 1992; Lee *et al.*, 2003). In addition, Kim *et al.* (2015) and Lieberman and Asaba (2006) also note that firms may enter a new market as a response to or in prospect of the rival companies' entry into the concerned new market even without a strong conviction for high post-entry profits. Consequently, for the new market entrants that are more motivated by different incentives than post-entry profits, a large new market size does not always lead to a market entry decision, so the market size–market entry relationship may not be significant for these firms.

Building on the logic of the strength of the relationship between market size and post-entry profit and the relative importance of post-entry profit expectation compared to other types of entry motivations, we identify and empirically test the moderating effects of the characteristics of new market entrants and of entered new markets. We use a meta-analytic approach in which we analyze parameter estimates of the impact of market size on market entry obtained from 41 existing empirical studies and validate our contingency arguments. Our meta-analysis results reveal that the entry-context-specific variables used in this study notably moderate the impact of market size on new market entry decisions, as the research frame suggests.

Our key contribution is to present contingency arguments to shed light on the relative importance of market size in market entry decisions. In the following sections, we construct hypotheses regarding the positive relationship between market size and new market entry and the moderating effects of the entry-context factors affecting this relationship. Then, we test these hypotheses and discuss the implications of our findings, as well as the contributions of this study.

2. Hypotheses

2.1 Main impact of market size on market entry

As profit-seeking motivation is the basic assumption for new market entry (Asplund and Nocke, 2006; Dixit, 1989; Geroski, 1995; Gort and Klepper, 1982; Spence, 1977), conventional wisdom suggests that firms enter new markets with the expectation of making economic profits. Accordingly, new market entry has long been researched in relation to the focal market's size, usually referred to as market potential or market demand, as it is assumed to indicate, to a great extent, the post-entry profits to be expected from the new market (Fuentelsaz and Gomez, 2006; Pennings, 1982). Market potential is the limit approached by market demand as industry marketing effort goes to infinity, whereas market demand for a product or service is the total volume bought by customers in the market (Kotler, 1984); but despite this difference, market size in terms of both is considered to be a crucial factor for success in a new market because both are related to expected post-entry profit (Rodríguez-Pinto *et al.*, 2007). Potential entrants often speculate that a large market size may offer them a better chance to realize profits based on high unit sales, because unit sales, by definition, mean the firm's share of the market.

Furthermore, a large market size may help achieve the minimum post-entry profit required for survival, thereby contributing to potential entrants' abilities to overcome entry barriers. Although the entry barrier theory (Bain, 1956) does not explicitly address market size as a condition for market entry, market size is logically tied to the level of entry barriers (Sutton, 1991), that is, as the market size increases, market entrants' production schedules are expanded and economies of scale can be achieved more easily; therefore, scale-based entry barriers against small new entrants become less effective (Fritz, 1989). Also, when a market is large, new entrants are more likely to be able to overcome the differentiation advantages of incumbent firms, because the market is large enough to allow new entrants to explore new product differentiation opportunities (Bayus *et al.*, 2007; Han *et al.*, 2001; Zhao and Parry, 2012). Although Asplund and Nocke (2006) show that large market size is likely to increase inter-firm competition that results in market share reduction and price declines, their empirical evidence still hints that both entries and exits increase as market size increases. Although different market entry motivations might weaken the impact of market size on market entry, Kim *et al.* (2015) report that profit motivation is the dominant reason for market entry. Therefore, we expect a general positive impact of market size on new market entry:

H1. Holding other factors such as firm and industry characteristics constant, market size has a positive impact on the likelihood of a new market entry decision.

2.2 Factors moderating the market size–market entry relationship

An examination of the previous empirical studies on new market entry nevertheless indicates that the assumed positive impact of market size on new market entry decisions varies to an apparently significant extent. For the diversity of conclusions regarding the impact of a large market size on entry, see Table I, which lists the previous empirical studies on new market entry that include measures of market size and indicates for each study whether the findings show a positive, negative, mixed or null effect of market size on new market entry.

To explain such variations, we adopt a contingency approach, with a premise that entering a large market is not always optimal or desirable but depends on the characteristics of firms or market entry circumstances (Ginsberg and Venkatraman 1985; Ekeledo and Sivakumar, 1998).

Our study identifies organizational and environmental constructs among other contingency factors which have been continuously discussed in the most existing empirical

Study	Empirical setting	Sign of effect of market size on entry*
Abraham *et al.* (2007)	Hospitals' local market entry	1
Baum and Korn (1996)	Air carriers' entry into airline industry	1
Berger *et al.* (2004)	Banks' branch entry	1
Damar (2009)	Payday lenders' local market entry	1
Daunfeldt *et al.* (2006)	Retailers and wholesalers' local market entry	1
Debruyne and Reibstein (2005)	Financial service providers' online brokerage market entry	1
Diestre *et al.* (2014)	Entry into new biopharmaceutical industries	1
Dunn (2008)	Air carriers' entry into airline industry	1
Feinberg (2008)	Credit unions' local market entry	1
Felici and Pagnini (2008)	Banks' branch entry	1
Gobbi and Lotti (2004)	Banks' branch entry	1
Greenstein and Mazzeo (2006)	Exchange carriers' local telecommunication entry	1
Greve (2000)	Banks' branch entry	1
Hochberg *et al.* (2007)	Entry into venture capital market	1
Khemani and Shapiro (1986)	Entry into manufacturing industries	1
Kim (2009)	Air carriers' entry into airline industry	1
Lei and Browne (2008)	Medical malpractice insurers' local market entry	1
Mitra and Golder (2002)	Consumer products companies' foreign market entry	1
Moreno-Torres *et al.* (2009)	Pharmaceutical firms' generic market entry	1
Pai and Clement (1999)	Health maintenance organizations' entry into Medicare risk program	1
Seim (2006)	Video retailers' local market entry	1
Swaminathan (1998)	Breweries' microbrewery and brewpub entry	1
Toivanen and Waterson (2005)	Food retailers' local market entry	1
Amel and Liang (1997)	Banks' branch entry	2
Bojnec and Xavier (2004)	Entry into manufacturing industries	2
Brown and Zimmerman (2004)	Exchange carriers' entry into local telecom industry	2
Kawai and Urata (2002)	Entry into manufacturing industries	2
Thomas and Rivard (1990)	Banks' branch entry	2
Boguslaski *et al.* (2004)	Air carriers' airline entry	3
Bronnenberg and Mela (2004)	Retailers' entry into frozen pizza market	3
Carroll and Swaminathan (1991)	Entry to brewing industry	3
Fotopoulos and Spence (1998)	Entry into manufacturing industries	3
Fuentelsaz and Gomez (2006)	Banks' branch entry	3
Kim *et al.* (1999)	Entry into VC recorder, PC and workstation markets	3
Kyle (2006)	Entry into pharmaceuticals market	3
Liu (2009)	Air carriers' airline entry	3
Rosenbaum and Lamort (1992)	Entry into manufacturing industries	3
Chesbrough (2003)	Hard-disk drive firms' sub-market entry	4
Ozsomer and Cavusgil (1999)	Entry into global PC markets	4
Quast (2008)	Exchange carriers' local telecommunications entry	4
Sebrek (2007)	Technology ventures' security software entry	4

Notes: *1 = positive effect; 2 = no effect; 3 = mixed effects; 4 = negative effect

Table I. Empirical studies on the market size–new market entry relationship

market entry studies (Robinson and McDougall, 2001). Organizational contingency considered in this study is *industry incumbency*. Firms already having a business in the related industries might have different entry motivations than just post-entry profit for the new focal market. For instance, they would like to maximize the utility of their market/technological knowledge and resources obtained from the related businesses by entering new markets (Helfat and Lieberman, 2002; Kim and Min 2012; King and Tucci, 2002; Scott Morton, 1999). Because of such diverse entry motivations and environmental challenges facing incumbents, many empirical studies on new market entry include firms categorized as industry incumbents in their sample (Berger *et al.*, 2004; Boguslaski *et al.*, 2004; Chesbrough, 2003; Debruyne and Reibstein, 2005; Diestre *et al.*, 2014; Felici and Pagnini, 2008; Liu, 2009; Mitra and Golder, 2002; Pai and Clement, 1999; Toivanen and Waterson, 2005; Thomas and Rivard, 1990). We therefore chose this construct as an important moderator for our study of meta-analytic approach.

Environmental contingencies in this meta-analysis include the new market characteristics such as *niche market, high-tech market* and *year of market entry*. That is, we analyze the moderating effect of how market is defined, in particular, whether the firm's entered market is a broadly defined or tightly defined *niche market*. The niche market strategy has been a popular strategy (Porter 1985), and many academic scholars have paid attention to how the niche strategy can be implemented (Han *et al.*, 2001; Kim and Atuahene-Gima, 2010). Consequently, many studies investigate entries into tightly defined markets (Amel and Liang, 1997; Berger *et al.*, 2004; Boguslaski *et al.*, 2004; Damar, 2009; Debruyne and Reibstein, 2005; Diestre *et al.* 2014; Greve, 2000; Lei and Browne, 2008; Moreno-Torres *et al.*, 2009; Sebrek, 2007; Swaminathan, 1998).

We also analyze the moderating impact of whether the newly entered market is a *high-tech market*. Technological uncertainty in a high-tech market harms stable cash flow (or profit) from a new market entry, as the market often evolves in an unpredicted direction as technology advances (Kim *et al.*, 2015; McGrath, 2001). Because of the inherent challenge and uncertainty originating from high technology, along with much interest in entering a high-tech market, numerous studies looked at market entry into a high-tech market empirically (Greenstein and Mazzeo, 2006; Diestre *et al.*, 2014; Moreno-Torres *et al.*, 2009; Brown and Zimmerman, 2004; Kim *et al.* 1999; Kyle, 2006; Chesbrough, 2003; Ozsomer and Cavusgil, 1999; Quast, 2008; Sebrek, 2007). Finally, following the concern raised by literature on the increasing competitive market condition in recently growing markets (Brown and Zimmerman, 2004; Kim and Min, 2012), we analyze the effect of the year of new market entry as another moderating factor. These four contingency factors that are expected to moderate the relationship between the market size and market entry decision are hypothesized in the following sub-sections.

2.3 Niche market entry

A *niche market* is a target segment within an existing industry (Debruyne and Reibstein, 2005; King and Tucci, 2002; Porter, 1985) which supports the survival of one form of organization (Hannon and Freeman, 1977; Dalgic and Leeuw, 1994; Greve, 2000). Because such niche market opportunity is defined within an existing industry, a niche market entrant confines its market with special sub-product categories (e.g. 14", 8" and 3.5" disk drives markets instead of just disk drives markets), narrowly defined service segments (e.g. after-midnight bus operations instead of bus operations) or tightly defined geographic areas (e.g. first banking service entry to local market instead of sequential entries to a broader market boundary). Consequently, the niche's market boundary is clearly conceptualized, and its market size is firmly certified. This relative certitude in the assessment of market size

necessitates niche market entrants to assure post-entry profit. Thus, potential market entrants become more sensitive to market size when they target a niche market.

Furthermore, firms entering a niche market generally aim to have a higher share than those entering a non-niche market, as less competition is expected in a niche market (Dalgic and Leeuw, 1994). Consequently, niche market entrants tend to take a larger portion of market share out of the market size. In fact, a sustainable niche market strategy depends on "selecting a segment or group of segments in the industry and tailors its strategy to serve them to the exclusion of others" (Porter, 1985, p. 15). Thus, entrants to a niche market are more sensitive to segment market size, whereas those who enter a non-niche market may be more or at least equally concerned with market share (Markman and Gartner, 2002). Related to this point, Michael Porter suggested "feasibility of a focus strategy (niche market) depends on the size of a segment and whether it will support the cost of a tailored value chain" (p. 266). Also, for a comparatively small-sized niche market, even a slight change in the market size may result in a significant percentage change in the post-entry profit (Rodríguez-Pinto *et al.*, 2007). Therefore, we predict that the impact of market size on entry into a niche market is expected to be greater than the impact on entry into a non-niche market. We hypothesize:

H2. The positive impact of market size on the likelihood of new market entry is greater for niche market entries than for non-niche market entries.

2.4 Entry into markets in high-tech industries

Market size is a relatively less reliable indicator of expected profit for high-tech markets than it is for non-high-tech markets. This is because, while the potential market size is rather stable throughout the product life cycle in non-high-tech industries, a post-entry technological advance may determine the actual market demand and profit in high-tech industries (Bayus *et al.*, 2007; Chesbrough, 2003; Gatignon *et al.*, 2002; Özsomer and Cavusgil, 1999; Urban *et al.*, 1996), making the potential market size a less reliable predictor of market profit. Urban *et al.* (1996) noted that forecasting really new products that represent new technology is notoriously difficult because:

> … forecasts must consider the diffusion of information, the evolution of the technology, the discovery of new uses, the reduction in price from high initial levels, the growth of an infrastructure, and entry of competition (p. 47).

Chesbrough (2003) also noted that forecasting future market size in high-tech markets contains a high degree of uncertainty and added that forecasts from outside research firms "often differ in their perception of future size" (p. 661). Consequently, a large market size forecast by potential market entrants can be a less attractive/reliable inducement for high-tech market entry than for non-high-tech market entry.

In addition, because of this relatively unreliable profit forecast in high-tech markets and also in the perspective of technological capability development for survival in high-tech industries, some firms enter a high-tech market not necessarily to achieve high profits but to learn new technologies or obtain great technological spillovers for long-term benefits (Cohen and Levinthal, 1990; Kim *et al.*, 2015; McGrath, 2001). For these firms in high-tech industries, a large market size may not be such a critical concern for their new market entry decision as compared to its great importance to the firms in non-high-tech industries. We therefore hypothesize:

H3. The positive impact of market size on the likelihood of new market entry is smaller for high-tech industries than for non-high-tech industries.

2.5 Entry of industry incumbent firms

Industry incumbent firms which have business experiences in their related industries with the current new market are expected to be less sensitive to market size when they make a market entry decision than entrepreneurs, because the former may have other concerns or objectives beyond the expected profit from the focal market (Bond and Houston, 2003; Mata, 1993).

For instance, even with unclear new market profit expectations, the incumbent firms may enter a new market to improve their product portfolio based on a new product line and thereby to secure long-term business planning (Blau *et al.*, 2004; Parsons and Schumacher, 2012). In this case, such a new product line extension may not necessarily be for great profits from the new market, but the industry incumbent firms could consider this market entry, to some extent, as a long-term investment. Therefore, their concern about the market size for entry decision may not be as high as that of non-incumbent firms (e.g. entrepreneurs or start-up firms that do not have related business experience) that should survive in the new market based on the sales profits obtained from it.

Also, by entering a related new market, incumbent firms may be willing to maximize the utility of their owned R&D/market resources obtained from the previous business experiences, which will contribute to the cost efficiency in their new market entry endeavors (Helfat and Lieberman, 2002; Kim and Min, 2012; King and Tucci, 2002; Scott Morton, 1999). This fact also leads the industry incumbent firms to be less sensitive to the market size influences on new market entry decisions than non-incumbent firms are. We therefore formally state:

H4. The positive impact of market size on the likelihood of new market entry is smaller for industry incumbent firms than for non-incumbent firms.

2.6 Year of market entry

Has the importance of market size for new market entry decisions changed with the passage of time? We contend that the role of market size as a reliable indicator of post-entry profit has diminished over time, because market entrants may not have benefited much from a large-sized new market in recent years owing to increasingly intensified new market competition and the accelerating pace of competitive new entries over time (Brown and Zimmerman, 2004; Kim and Min, 2012). Market pioneers may no longer enjoy a long monopoly period as they did in earlier days but must share new markets with other early entrants (Agarwal and Gort, 2001; Kim and Min, 2012). Agarwal and Gort (2001) have shown that the interval between the first commercial introduction of a new product and the follow-up entries by competitors have substantially diminished over time. On the basis of data for 46 major product innovations, they report that the time duration between the new market pioneer and its follow-up competitor was almost 33 years at the turn of the twentieth century, but it was diminished to 3.4 years for innovations in the period 1967-1986. Kim and Min (2012) also note that the interval between entries by the first and second entrants decreased from the 1960s to the early 1990s.

This acceleration in the rate of competitive market entry means that the profit implications of market size have diminished, because early entrants must soon share the pie with other entrants following close on their heels. In other words, even if a new market's size is great, rapidly increasing competition may prevent a market entrant from realizing high profits unless it can secure a good portion of the market share throughout the industry's product life cycle (Ali *et al.*, 1995; Mascarenhas, 1997). Based on the foregoing discussion, we formally posit that:

H5. The positive impact of market size on the likelihood of new market entry has decreased over time.

3. Method

3.1 Data

To test the main effect of market size on entry decisions and the hypothesized moderating effects, we perform a meta-analysis on the basis of a synthesis of prior empirical research findings. The empirical studies compiled for our meta-analysis were identified by searching for studies published up to 2014 with the keywords "new market", "new product", "product market" and "market entry" in the ABI/Inform, Science Direct, Emerald, Blackwell Synergy and Google Scholar databases. We also searched studies manually in the business and economics journals where market entry articles are usually published, such as *Strategic Management Journal*, *Administrative Science Quarterly*, *Academy of Management Journal*, *Management Science, Journal of Marketing*, *Journal of Marketing Research*, *Marketing Science*, *Journal of the Academy of Marketing Science*, *International Journal of Research in Marketing*, *European Journal of Marketing*, *Journal of Product Innovation Management*, *American Economic Review*, *Journal of Political Economy*, *Review of Economics and Statistics*, *The Rand Journal of Economics* and *Journal of Industrial Economics*. Furthermore, we scanned the references in the studies thus identified for unpublished work or working papers.

For data analysis purposes, we selected the empirical studies that report clear measurement procedures and the regression coefficients that explain the market size–market entry relationship. For the values of the dependent variables in our meta-analysis, regression coefficients, rather than correlation coefficients, were used for three reasons. First, regression coefficients are the most commonly used metric reported in the literature on new market entry (Szymanski *et al.*, 1993, 1995). Second, a meta-analysis that analyzes regression coefficients instead of correlations often provides a more accurate estimate of the grand mean of the studied relationships and its associated variance (Raju *et al.*, 1986). Third, regression-coefficient-based analysis provides a more conservative test for the significance of impact, because the analysis of regression slopes tends to understate the mean estimate of association (Szymanski *et al.*, 1995). We identified a total of 42 studies (40 published and 2 unpublished), which yielded 221 unstandardized regression coefficients, for the impact of market size on firms' new market entry.

For the meta-analysis, we coded the regression coefficients for market size, along with contextual factors and measurement procedures reported in the sample studies. To reduce the coding error, the author team conceptually defined the measures and developed a coding scheme for the measures accordingly (Lipsey and Wilson, 2001; Stock, 1994). Specifying the relevant information extracted from each study, one author independently coded all the studies using this scheme. The other authors later coded the variables to check measurement reliability. No disagreement was found on any of the measures, except for one study classifying its sample as high-tech versus non-high-tech industries. After this study is dropped, our sample for the meta-analysis includes 219 regression coefficients from 41 studies. See Table I for a list of the empirical studies used for our meta-analysis.

3.2 Measures

Our dependent variable of interest is the value of the regression coefficient that reflects the impact of market size on new market entry. We analyze the unstandardized regression coefficient estimate for each regression analysis in the sample empirical studies. As noted in the previous section, there is a vast variation in the signs and magnitudes of the regression coefficient that relates market size to market entry.

We distinguish between a *niche market entry* (coded as 1) and a non-niche market entry (coded as 0). The studies in our sample explicitly or implicitly specify the scope of entered markets as either niche or non-niche markets. A niche market is operationally defined to be a special product or service segment that is not provided or served by mass-product markets. Examples of niche markets are the microbrewery and brewpub segments of the brewing industry (Swaminathan, 1998), online brokerage in the retail brokerage industry (Debruyne and Reibstein, 2005) and rural markets for bank branching (Greve, 2000).

Technology is know-how or information required to produce and/or market products or services (Capon and Glazer, 1987). Some researchers have reported a wide variation in R&D activities across different industries and have defined high-tech industries based on the level of R&D expenditures in an industry. For instance, Riche *et al.* (1983) classify high-tech industries on the bases of the proportion of technology-oriented workers in the industry and R&D expenditure as a percentage of industry shipments. In a departure from the work of Riche *et al.* (1983), Hadlock *et al.* (1991) classify an industry as high-tech if its R&D employment ratio is greater than 1.5 times the average of all industries. Following the latter high-tech-industry classification scheme, we coded a *high-tech market* entry variable as 1 if the sample data of an empirical study cover only high-tech market entries. High-tech industries in our sample include diagnostic imaging equipment, PCs and desktop laser printers, whereas non-high-tech industries (coded as 0) include venture capital, railroad founding, airlines, savings and loans, brewing, retailing and health maintenance.

The measure of *industry incumbent firms' market entry* makes a distinction between the industry incumbent firms' entries into their related fields (coded as 1) and other firms' new market entries such as the start-up firms' entrepreneurial entries (or unrelated market entries), as well as unspecified cases (coded as 0). To test for the diminishing impact of market size on new market entry decisions over time, we define the measure *year of market entry* for each empirical study. We ran our regression using left year-end, right year-end and the middle year point of each study's data set for the measure of *year of market entry*. The left year-end is the first year of the entry data for each sample study, the right year-end is the last year and the middle year is the average of the left year-end and the right year-end of each study.

We control for a number of factors pertaining to the sample characteristics, measurement and model specifications of each empirical study. First, we control for *US firm's entry* as a dummy (1 for a US firm and 0 for a non-US firm), as US industries have been the dominant research setting in most of the market entry literature, and this factor might co-vary with the hypothesized factors, such as high-tech market entry or year of market entry. We expect market size to have a stronger impact on US firms than on non-US firms, as US firms are more domestic-market-focused and short-term-profit-oriented than non-US firms (Hofstede, 1993; Storti, 2004) and, as mentioned above, the dominant practice of defining and measuring market size in terms of firms' domestic markets means that estimates of profit potential are the most valid for domestic-focused firms. Our study samples do not contain entries by US firms into foreign markets; therefore, the measure *US firm's entry* indicates a firm's entry into a domestic market.

We also control for firms' *foreign market entry* (coded as 1 for entry into a foreign market and 0 otherwise)[1]. Although a country's market size is often used to assess market attractiveness (Mitra and Golder, 2002; Özsomer and Cavusgil, 1999), the impact of market size on foreign market decisions should be less influential compared to one on a domestic market entry, because a foreign market entry decision involves assessing not only market attractiveness but also country risks (Ball *et al.*, 2010).

In addition, we control for *data duration in years*, which is measured as the duration in years between the left year-end and the right year-end of the data in each sample study. There are wide variations in *data duration* in the empirical studies in our sample: the shortest is one year (Abraham *et al.*, 2007; Dunn, 2008; Seim, 2006), and the longest is 355 years based on market entries in the American Brewing Industry from 1633 to 1988 (Carroll and Swaminathan, 1991). We expect that as *data duration in years* increases, the positive impact of market size on entry may be diluted, because a study covering many years may include the entries not only at the early stages but also at the later stages of market development, when the market has consolidated and market share has become a more relevant factor than market size for market entry decisions.

Different types of measures for market entry (e.g. number of entries, entry rate or entry probability) may contribute to variance in the observed effects of market size on market entry. We therefore coded *measure of entries* as 1 if market entry was measured by the number of entries in a certain time period and 0 if it was measured by entry rate or entry probability. To indicate whether the measure of market size was based on potential sales or on potential population, we coded *measure of market size* as 1 for sales-based measures and 0 for population-based measures. Because the sample includes entries into both new geographical areas and new industries, we control for *geographical market entry* (coded as 1 if the entry is just into new geographic areas based on the same industry). As some model specifications include market growth and market size, we control for this variable as well. Inclusion of *market growth* variable (coded as 1) in a model is expected to weaken the impact of market size on entry, because market growth also reflects the post-entry profit. The measures for the model variables are summarized in Table II.

4. Results

Table III presents the correlation matrix and descriptive statistics for each of the variables in our study. Overall, the data in the studies in our sample cover time periods between 1633 and 2006, with an average time period of 18.4 years. The majority of new market entries are by US firms (59 per cent). Market size is measured by either industry sales (39 per cent) or population (61 per cent) within the boundaries of the market. The majority of sample studies use an individual probability model of market entry (66 per cent), whereas the others use count measures of market entry (34 per cent). Only 10 per cent of the studies include both market size and market growth in their analyses.

Table IV reports the results of the mean comparisons for the impact of market size on new market entry based on the moderating factors we suggest. This table shows that the impact of market size on market entry varies substantially between niche market entry and non-niche market entry. The average impact of market size for non-niche market entry is merely 0.03, which is statistically much smaller than the average impact of market size for niche market entry (0.78). The mean comparison between high-tech and non-high-tech market entries is also significant, offering supportive evidence that the impact of market size on new market entry is far weaker in high-tech markets and can be even negative. However, the difference between industry incumbent firms' market entry and other (i.e. non-incumbent) firms' market entry in terms of the average market size impact is not shown to be significant. Also, the average market size effects among the various years of market entry are diverse and do not display a clear pattern. Although the mean comparison results are informative, the results do not sort out the other factors from the focal moderating factor. Thus, we need to resort to a multiple regression model estimation approach for further analyses of these differences that provide variations in the impact of market size on new market entry in the previous literature.

Variable	Description
Dependent variable	
Impact of market size on market entry*	The regression coefficient of market size in each empirical study listed in Table I. The coefficient indicates the impact of market size on market entry
Hypothesis-testing moderating variables	
Entry into a niche market	1 if the sample data of each empirical study includes only firms that entered market confined to a special segment; 0 otherwise
Entry into a high-tech market	1 if the sample data of each empirical study covers only high-tech market entries; 0 otherwise
Industry incumbent firms' market entry	1 if the sample data of each empirical study covers only incumbent firms' market entries; 0 otherwise
Year of market entry (left year-end, right year-end and middle year)	The calendar year of market entry less 1900. The year of market entry is measured based on *left year-end, right year-end* and *the middle year* of the observation window of the sample of the empirical study
Other sample characteristics	
US firms' entry	1 if the sample data of the empirical study were obtained from the U.S.; 0 if they were obtained from other countries
Foreign market entry	1 if the sample data of the empirical study covers multinational foreign market entry; 0 otherwise
Data duration in years	The duration (in number of years) of the sample data in each empirical study
Measurement and model specification	
Measure of market size	1 if the market size in the empirical study is measured by industry sales; 0 if the market size is measured by the population within the market boundaries
Measure of entries*	1 if market entry in the empirical study is measured by the number of entries; 0 otherwise (e.g. entry rate or probability)
Geographical market entry	1 if the level of analysis is an entry into a specific geographic area; 0 otherwise
Control for market growth*	1 if the regression specification of the empirical study controls for market growth; 0 otherwise

Notes: *All the variables are measured by analyzing the sample descriptions of each study, except for impact of market size on market entry, measure of entries and control for market growth; Those variables are obtained from the regression analysis model specification and estimation results

Table II. Measures used in the meta-analysis

Table V provides the results of our regression analyses. For the regression model estimations, we used sample-size-weighted least squares (WLS) regressions by giving greater (lesser) weight to the estimates of the studies with a large (small) sample size than to the average sample size of the studies used (Hunter and Schmidt, 1990). The dependent variable represents the set of the estimated coefficients for the impact of market size on

Table III. Descriptive statistics and correlations ($n = 219$)

	Variables	1	2	3	4	5	6	7	8	9	10	11	12
1.	Impact of market size												
2.	Entry into a niche market	0.27**											
3.	Entry into a high-tech market	−0.16*	0.02										
4.	Incumbent market entry	−0.05	0.13*	−0.09									
5.	Year of market entry[a]	−0.10	−0.20**	0.21**	−0.01								
6.	US firms' entry	0.05	0.33**	0.13	0.17**	0.30**							
7.	Foreign market entry	−0.10	−0.22**	0.26**	0.13	−0.32**	−0.40**						
8.	Data duration in years	−0.01	0.11	−0.13	0.19**	−0.71**	−0.24**	0.56**					
9.	Measure of market size	0.01	0.14*	0.04	−0.01	0.05	0.21**	−0.27**	−0.04				
10.	Measure of entries	0.18**	0.01	−0.01	−0.26**	−0.14*	0.02	−0.24**	−0.14*	−0.08			
11.	Geographical market entry	0.12	0.15*	−0.33**	0.20**	−0.16*	0.17*	−0.17*	0.19**	−0.51**	0.17*		
12.	Control for market growth	0.05	0.12	0.05	0.14*	0.15*	−0.01	−0.10	−0.16*	0.21**	−0.17*	−0.28**	
	Mean	0.26	0.32	0.22	0.28	85.3	0.59	0.10	18.4	0.39	0.34	0.69	0.10
	SD	1.29	0.46	0.42	0.45	19.4	0.49	0.30	23.6	0.49	0.47	0.46	0.30

Notes: $*p < 0.05$; $**p < 0.01$; [a]Middle year was used

Table IV. Heterogeneity of impacts of market size on market entry ($n = 219$)

Variables	Impact of market size on market entry
Niche market entry ($n = 67$)	0.78
Non-niche market entry ($n = 152$)	0.03
| t-stat. |	4.09***
Entry into a high-tech market ($n = 49$)	−0.13
Entry into a non-high-tech market ($n = 170$)	0.37
| t-stat. |	2.43**
Industry incumbent firms' entry ($n = 62$)	0.17
Other firms' entry ($n = 157$)	0.29
| t-stat. |	0.67
Year of market entry	
Before 1980 ($n = 76$)	0.13
1980-1989 ($n = 52$)	0.02
1990-2006 ($n = 91$)	0.50
| F-stat. |	2.84*

Notes: *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

Table V. Meta-regression results for impact of expected market size on new market entry ($n = 219$)

Variables	Model 1	Model 2	Model 3	Model 4
Constant	0.05* (1.89)	1.98*** (2.91)	1.87*** (2.76)	1.96*** (2.92)
Entry into a niche market		0.30** (2.34)	0.29** (2.31)	0.30** (2.34)
Entry into a high-tech market		−0.44*** (−4.17)	−0.44*** (−4.18)	−0.44*** (−4.17)
Industry incumbent firms' market entry		−0.50*** (−6.21)	−0.50*** (−6.16)	−0.50*** (−6.12)
Year of market entry (left-end year)		−0.02*** (−2.79)		
Year of market entry (middle year)			−0.02*** (−2.63)	
Year of market entry (right-end year)				−0.02*** (−2.79)
Other sample characteristics				
US firms' entry		0.35*** (4.10)	0.35*** (4.08)	0.35*** (4.10)
Foreign market entry		0.56 (1.27)	0.57 (1.30)	0.56 (1.27)
Data duration in years		−0.03*** (−4.04)	−0.02*** (−4.00)	−0.02*** (−3.22)
Measurement and model specification				
Measure of market size		−0.23* (−1.67)	−0.22 (−1.59)	−0.23* (−1.67)
Measure of entries		−0.23* (−1.89)	−0.22* (−1.82)	−0.23* (−1.89)
Geographical market entry		0.17 (1.07)	0.17 (1.09)	0.17 (1.06)
Control for market growth		0.37 (1.55)	0.37 (1.58)	0.37 (1.55)
R^2	0.00	0.25	0.25	0.25

Notes: *$p < 0.10$, **$p < 0.05$ and ***$p < 0.01$; unstandardized regression coefficients are reported; t-statistics are in parentheses; the t-statistics and p-values are based on a conservative two-tailed test

market entry in previous studies. To gauge potential collinearity among predictor variables, we examined the variance inflation factor (VIF) associated with each variable. The highest VIF value is 2.56 for *data duration in years,* and the lowest one is 1.16 for *industry incumbent firms' market entry*. The average VIF value for all the independent variables is 1.53. Overall, the VIF values which are far less than 5 indicate that there is little threat of a multi-collinearity problem.

Model 1 in Table V is the simple base model that only includes the constant term. The positive effect of market size ($b = 0.05$, $p < 0.1$) suggests that a large market size in general

has a positive impact on new market entry. Note that this regression coefficient estimate is by definition the same as the weighted mean value of the market size impact on entry. If we do not consider any moderating effects, the impact of market size on entry is positive. Therefore, *H1* is supported. Models 2-4 provide results regarding the hypothesized moderating effects. The parameter estimate of *entry into a niche market* holds a significant positive sign in Models 2 and 4 ($b = 0.30, p < 0.01$) and in Model 3 ($b = 0.29, p < 0.01$), supporting *H2*. The moderating effect of *entry into a high-tech market* on the market size–new market entry relationship is negative and significant in Models 2, 3 and 4 ($b = -0.44, p < 0.01$). Hence, *H3* is supported. The impact of *industry incumbent firms' market entry* is negative and significant in Models 2, 3, and 4 ($b = -0.50$, $p < 0.01$), supporting *H4*. The moderating impact of *year of market entry* on the market size–entry relationship is negative and significant with all three different measures of *year of market entry* ($b = -0.02, p < 0.01$) for Models 2, 3 and 4, which supports *H5*.

It is worth noting that the *US firm's entry* variable is positive and significant. This result implies that US firms are more highly motivated than non-US firms by the profits that a large market size is assumed to imply. *Data duration in years* has a negative moderating effect. This result is in line with our conjecture that the importance of large market size in entry decisions diminishes as the data duration observation window widens, because of the declining importance of market size relative to market share as a market develops over time. The negative and significant coefficient for *measure of market size* indicates that sales as a measure of market size has a less impact on entry decisions than population as such a measure. This might be because market size measured in population is more likely to reflect future market potential than market size measured in sales.

5. Discussion

5.1 Contributions and findings

This study contributes to the marketing strategy literature by explaining a wide variation in the results of empirical research regarding the impact of market size on firms' new market entry decisions. We suggest that such a variation may come from two major sources. First, under a widely accepted argument that firms' new market entry is for their post-entry profit (i.e. profit-seeking motivation assumption: Dixit, 1989; Geroski, 1995; Gort and Klepper, 1982), the strength of the link between market size and post-entry profit can vary across different competitive situations.

Second, according to another stream of market entry motivation research, firms' new market entry may not always be triggered by post-entry profits but by other indirect, long-term motives such as maximal use of owned technological/market resources (Helfat and Lieberman, 2002; King and Tucci, 2002; Mitchell, 1989), development of complementary product-lines (Chen and MacMillan, 1992; Lee *et al.*, 2003) or learning updated technologies (Cohen and Levinthal, 1990; McGrath, 2001). These kinds of entry motivations could dilute the strength of the impact of the new market size, which reflects post-entry profits, on new market entry decisions (Kim *et al.*, 2015).

Our meta-analysis based on 41 empirical studies validates that the four moderating factors reflecting these two major sources of variation – niche market entry, high-tech market entry, industry incumbents' market entry and the year of market entry – significantly explain the differing strength of the impact of market size on new market entry. First, the positive impact of market size on the likelihood of new market entry is greater for niche market entries than for non-niche market entries. This result is consistent with our expectation and previous research in that a niche market with its relatively limited market extent and less competition would make the market entrants more sensitive to segment

market size as the base of securing post-entry profits (Dalgic and Leeuw, 1994; Markman and Gartner, 2002).

Second, market size is relatively less critical for new entries into high-tech markets than it is for new entries into non-high-tech markets. We have empirically confirmed that the potential market size of high-tech industries is pretty dynamic, so it may not be a stable surrogate for post-entry profits. The existing studies also argue that firms' technological level (instead of market size) after new market entry will be an important factor that creates sustainable profits in high-tech markets (Bayus *et al.*, 2007; Chesbrough, 2003). Another stream of research also supports this finding in that new market entrants in high-tech markets may have other major motivations than just short-term profits, which include learning new technologies or establishing a bridgehead for related technological market development (Kim *et al.*, 2015; McGrath, 2001).

Third, it has been empirically validated that industry incumbent firms may have more diverse new market entry motivations on top of post-entry profits. Previous research also referred to these incumbents' motivations that include product portfolio management (Blau *et al.*, 2004; Parsons and Schumacher, 2012) and the efficient use of owned resources (Kim and Min 2012; King and Tucci, 2002). Such long-term-oriented or non-profit-focused motivations of industry incumbent firms' new market entry may dilute the impact of market size (i.e. profit-focused motivation) on market entry decisions.

Finally, we have confirmed that market size has a relatively weak impact on entry decisions when the entered new market is a more recently developed one. A major reason for this could be, as discussed before, increasingly competitive market conditions over time. With rapid market followers in recent new markets, even early entrants or pioneers may suffer from shrinking market shares (Agarwal and Gort, 2001; Brown and Zimmerman, 2004; Kim and Min, 2012). In this case, a large market size may not always imply high post-entry profits that lead to new market entry decisions.

5.2 Managerial implications

Our contingency view should help managers better understand under what circumstances market size is a more (versus less) critical driver for new market entry. In most cases, the greater the new market size, the greater the propensity to enter the market. However, our contingency arguments suggest that firms do enter a new market even when the market size is not perceived to be closely linked to profits or it is not large enough at the time of entry. In this regard, we provide managerial implications of this study in terms of some suggestions to the managers for better new market entry decisions and the information/knowledge they need to know for such decision-making based on our study results.

First, we recommend that firms should consider the potential market size more seriously when they get into a niche-type new market. So far, in practice, common sense might have led firms to dismiss the potential market size as an unimportant factor for a niche market, as a niche market *per se* does not imply a large market size in nature. However, our study results suggest that niche market entrants actually need to consider the target market size, because in a less competitive and more focused market such as a niche market, market size itself is closely related to the expected profits, which further relate to the firm sustainability in the new market (Markman and Gartner, 2002). Therefore, an accurate market size forecast will be an important piece of knowledge for niche-market entrants relative to other new market entrants.

Second, entry into a high-tech market is a noteworthy example for a new market entry with the initial market size being relatively less critical. Even when the initial expected market size is not that large for a specific high-tech market, its market boundaries may

expand after entry, as technology advances and offers more benefits to customers and, therefore, more business opportunities for firms in that high-tech market. Firms can also learn new technological trends from the other high-tech firms and update themselves on related new product development opportunities based on the state-of-the art technologies. So, for high-tech industries, potential market entrants need to be more equipped with technology forecasting capabilities and financial sustainability to support their long-term view of market success instead of current short-term profits.

Third, the industry incumbent firms are suggested to consider the various aspects of new market entry benefits that include firms' long-term business sustainability (Parsons and Schumacher, 2012) and entry cost efficiency (Helfat and Lieberman, 2002; Kim and Min 2012). Even if the expected market size is not that great, industry incumbent firms should decide on a new market entry with the idea of how this new market will be helpful to their future product portfolio and long-term business security. Such long-term, portfolio-oriented business investments are more common to industry incumbents, because they already have the existing product lines that may constitute a part of their future product development planning. The industry incumbent firms are recommended to explore a new market that can share a reasonable portion of market knowledge and technological resources from the existing product lines. With this efficient market entry mode based on their owned resources, the industry incumbent firms will also enjoy cost advantages when compared to start-up firms.

Finally, by analyzing the contextual factors and long-term, benefit-oriented entry motivations that affect firms' profit-based entry decision, our study suggests that corporate managers should be equipped with more industry-specific, resource-based strategic insights for new market entry. Although we have not linked a specific entry motivation to different market performance indices, our contingency model estimation results indirectly reflect an average trend of well-performing firms responding to such contextual factors, as being examined in this study. For example, well-established, highly reputed multi-national firms in high-tech industries are recommended to explore new markets of uncertain demands as long as they can view long-term benefits from the new markets in terms of business-line expansions or resource utilizations, as well as niche market opportunities (West and Meyer, 1997).

5.3 Limitations and future research directions

The current study also has potential of further improvement in terms of the method and scope of analysis, which we would like to suggest for future research. First, a caveat comes from the fact that we have investigated empirical studies whose market size measure is based on secondary data, i.e. reported industry sales or population. We acknowledge that the firms' own forecasted (or perceived) market size could be different from the market size data in this study (Thomas, 1987). Although the objective measure of market size is large (small), firms may forecast/perceive the market size to be small (large) depending on their strategic choice of market boundaries and management teams' mental confidence and prospect in the new market (Combe, 2012; Fritz, 1989; Zhao and Parry, 2012). Therefore, an inference from our findings is that subjective or strategic estimations of market size may be more relevant for new market entry decisions in some contexts such as high-tech market entry or industry incumbents' market entry. Relevant survey-based studies that attempt to measure the perceived market potential or expected market size will be helpful in complementing this data-based market size analysis. We leave these follow-up studies for future research.

Second, although our study has provided contingency arguments on the relative importance of market size in market entry decisions, it has not dealt with the contingent

impact of competitor movement on the focal firm's new market entry decision. For example, there is a stream of research contending that a firm tends to enter a new market as a strategic response to its peer competing firms' entries into the new market (Chen and MacMillan, 1992; Kim *et al.*, 2015; Lee *et al.*, 2003). For this type of new market entry, the importance of market size as the determining factor for market entry decision could be relatively diluted if most of the competing firms rush into the same new market. Our current study has not incorporated such imitative entry decision patterns of firms because we are lacking in estimation data of previous empirical studies on this issue. Future research efforts based on more comprehensive entry motivation data could provide empirical validations on this contingent factor.

Note

1. Although there are many studies about foreign market entry, their focus is not on the new product/service market entry but on the modes of foreign market entry (e.g. joint venture, franchise, etc.) and the related international firm performance. Many empirical studies cover only one-country case without measuring a market size variable, and most of them do not use regression analysis but provide descriptive statistics only.

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