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Leadership Positioning among U.S. Firms Investing in China

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Abstract: This study investigates leadership positioning by U.S. firms in China using the awareness, motivation, capability (AMC) perspective. We define leadership as first in industry to invest in China, and find that leaders have characteristics associated with higher AMC, evidenced by pre-existing multinational experience, higher product market orientation, smaller scale of operations, and higher input cost structure. Notably, the motivation to lower input costs and the prior capability in multinational operations mattered only for the first wave of firms leading industry investment earlier in time, while firms with smaller scale of operations exhibited a preference to lead investment in less popular provinces. Overall, these results provide a unique view on how AMC characteristics influence international investment decisions, suggesting that firms both strategically lead and strategically follow. In additional analysis, we examine how leaders and followers positioned themselves with respect to ownership, and find that leaders were more likely to choose entry modes that offered ownership control over flexibility, consistent with internalization theories.

Keywords: competitive dynamics; entry order; entry mode; discrete choice models

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1. Introduction

In 1983, American Motors Corp. established the first automotive, and the largest industrial joint venture in the People's Republic of China. At the time, Chairman and CEO Paul Tippet declared: *"The days when a major company could hope for long-term international success while limiting itself to domestic production and exports are gone"* (Pelfrey, 1983). Like many U.S. companies facing competitive pressures in their concentrated industry segments, American Motors Corp. saw the economic liberalization reforms that began with China's Open Door Policy in 1979 as a way to maintain and grow its market share.¹ Yet the company did not have significant international experience; it relied instead on its four-year partnership with Renault in France to *"set the pattern for future international manufacturing partnerships"* (Pelfrey, 1983). This model proved inadequate in China in the early 1980s: despite the country's market potential, bureaucratic and economic obstacles left the company's ambitious \$51 million joint venture, Beijing Jeep, on the verge of bankruptcy in 1986 (New York Times, June 8, 1986; Mann, 1997).

By comparison, firms with significant international experience, like personal care products company Gillette, placed less emphasis on rapid market penetration and focused on learning how to do business in China while working to establish a reputation and gaining the confidence of Chinese officials. In 1988, Michael C. Hawley, Vice President of Worldwide Operation Services at the Gillette Company explained this strategy as follows: *"The companies that have a lot of international experience have entered China with their eyes open, and they didn't get overly ambitious. They are going along laying the foundation for the future of their company... Gillette is a company that operates 60 factories in 30 different countries around the world. We had the basic ability to mount an operation anywhere in the world, but no one had built any experience in*

¹ Other pioneers in the early 1980s included Coca Cola, Pepsi, Occidental Petroleum, Eastman Kodak, Atlantic Richfield, and Beatrice Companies, among others (New York Times, June 8, 1986).

China at all. It was rather hard to set expectations based on anyone else's understanding or information” (Yoshihara, 1988).

As this anecdotal evidence suggests, the manner in which firms established initial investment presence in overseas markets was an important strategic consideration. Indeed, being the first among industry peers to establish operations in a foreign market can lead to significant advantages in terms of excess profits and market share. However, in the presence of environmental uncertainty, the ability to benefit is dependent on characteristics that allow firms to absorb risk. We investigate the likelihood that a firm will be first among industry peers to invest in China, using a theoretical framework based on the awareness, motivation and capability (AMC) paradigm (Chen, 1996; Smith, Ferrier and Ndofor, 2001). Specifically, we develop and test hypotheses for the relationship between investment leadership positioning and firm characteristics associated with *awareness* of external investment opportunities, *motivation* to exploit them, and *capability* to acquire external assets. In so doing, we provide a novel contribution to the international business literature since the AMC framework has not been previously applied to industry rivalry by domestic firms in foreign markets.

Because China’s Open Door Policy served as a time-zero event with respect to foreign direct investment, the country provides a natural experimental setting for the study of how firms strategically position themselves against industry rivals. For the purposes of our investigation, we construct a hand-collected sample of publicly traded U.S. companies investing in China between 1980 and 2005, and track the year, location and entry mode for each firm. We then examine firm characteristics that explain differences between firms that lead industry investment in China and those that follow. We conduct this analysis for the full 26 year sample period and for two separate subsamples, early (1980-1992) and late (1993-2005) entry. Consistent with arguments in Arregle,

Miller, Hitt and Beamish (2013), we also utilize heterogeneity in Chinese province-level characteristics to better evaluate their importance as determinants of entry positioning. As an additional dimension of leadership positioning, we conduct a multinomial probit analysis to explore whether firm-specific internalization advantages influences the choice of entry modes that offer ownership control compared to flexibility.

Our results show that firms leading their industry with investment in China have characteristics associated with higher AMC. For example, industry pioneers have higher marketing-seeking orientation, associated with heightened awareness of, and motivation to exploit, new investment opportunities. They also have multinational experience and asset structures with embedded abandonment options, which provided greater motivation and capability to expand to a foreign market. Notably, leaders are smaller in size, a trait associated with greater motivation to act quickly and aggressively to survive in competitive markets. In additional analysis of entry mode determinants, we find meaningful differences between leaders and followers. Greater asset specificity influenced industry pioneers to choose wholly-owned investment modes over joint venture partnerships, suggesting the need to internalize capabilities as they entered the country ahead of competitors, thus bearing more risk. In contrast, entry mode choices by follower firms were primarily influenced by province- rather than firm-level characteristics.

The rest of the paper is structured as follows. Section 2 provides a theoretical background and Section 3 develops testable hypotheses. Section 4 describes sample construction and provides descriptive statistics of the patterns of expansion by U.S. firms in China. We present our estimation framework in Section 5, empirical results in Section 6, and a concluding discussion in Section 7.

2. Theoretical Background

2.1 First Mover Advantages and Disadvantages

The notion that first movers in a new market are able to reap greater economic benefits compared to followers is well documented in the literature. First movers can earn excess profits, higher market shares, and have longer survival rates than followers (Lambkin, 1988; Kerin, Varadarajan and Peterson, 1992). This superior performance and survival stems from the ability to exploit opportunities for cost efficiencies, technological leadership, preemption of assets, and buyer loyalty (Lieberman and Montgomery, 1988). For example, first movers can capture customers through loyalty to a pioneering brand, and thus enjoy the advantage of high switching costs (Schmalensee, 1982; Carpenter and Nakamoto, 1989). They can preempt assets by securing scarce input resource and advantageous locations in advance of followers (Prescott and Visscher, 1977; McMillan, 1983). Cost advantages arise from economies of scale and learning through early preemptive investments (Dixit, 1980; Lilien and Yoon, 1990).

Some firms are positioned to benefit most from being first mover, and others have attributes that make them particularly vulnerable to first mover disadvantages (Li, Lam, Karakowsky and Qian, 2003). Specifically, early investment in foreign markets exposes entrants to political, institutional, technological, and market uncertainty, and also to free-rider effects where leaders create pathways for innovation that followers exploit (Lieberman and Montgomery, 1988, 1998; Zaheer, 1995; Gal-Or, 1987; Sorenson, 2000). Further, in the urgency of securing an apparent competitive advantage, first movers can be vulnerable to early exercise of the real option to wait, unadvisedly committing themselves to irreversible investments (Cottrell and Sick, 2001). Firms that are able to maximize first mover advantages and minimize their costs must therefore possess

characteristics that distinguish them from rivals. In this context, both leading and following should be intentional strategic choices.

We are specifically interested in isolating firm characteristics that are associated with being industry first entrant with respect to investment in uncertain new markets. Using a dynamic capabilities perspective, Teece, Pisano and Shuen (1997) show that successful market penetration is associated with firm attributes such as learning, ability to strategically restructure assets in response to changing market conditions, proprietary technologies, financial capabilities, organizational structure (e.g., focused versus conglomerate), and product market position. Several other studies identify similar firm-specific attributes associated with first mover success such as managerial skill and experience, R&D intensity, marketing intensity, financial capability, and specialized assets (Rosenbloom and Cusumano, 1987, Mitchell, 1991; Murthi, Srinivasan and Kalyanaram, 1996; Schoenecker and Cooper, 1998). For example, firms with established experience in one technology have a learning resource advantage to invest in a related new technology ahead of competitors and secure greater market share (Klepper and Simons, 2000). Similarly, greater cumulative organizational learning can provide early access to new opportunities and create barriers to subsequent entry (Spence, 1981).

For firms that strive to be industry leaders, timing is of the essence when launching a strategic initiative to competitive pressures by expanding operations in overseas markets. Chen (1996) identifies *awareness*, *motivation*, and *capability* (AMC) as three key drivers of strategic interaction among rivals, and we find this framework particularly well-suited for identifying firm characteristics that are relevant to first mover success. In the next section, we review the AMC paradigm and then use it to develop testable hypotheses for the likelihood of being first in the industry to invest in China.

2.2 Inter-Firm Competition and the Awareness, Motivation, Capability Framework

A firm's bundle of strengths, weaknesses and strategic opportunities is important in predicting success in inter-firm rivalry and can be evaluated by its degree of *awareness*, *motivation*, and *capability*. Firms' *awareness* of their competitive environment is a prerequisite for initiating predatory or retaliatory action, and stems from an understanding of the consequences of actions. *Motivation* is incentive to act, driven by the degree to which firms perceive that the potential payoff from competitive action or reaction exceeds the cost. *Capability* to initiate or respond to competitive actions depends on the incumbent's organizational resources. Having identified these three drivers of inter-firm rivalry, Chen (1996) develops propositions for the mediating impact of resource similarity and market commonality on the influence of AMC drivers on competitive attacks and responses.

In a review of the literature, Smith, Ferrier and Ndofor (2001) identify several firm characteristics associated with AMC. Firm age, size, management expertise, and nature of markets in which it competes are associated with awareness. Motivation is associated with firm characteristics such as performance, market share and past competitive behavior. Capability is characterized by factors such as management expertise, financial slack and firm size. Using a similar construct in a study of the drivers and consequences of organizational change in Chinese firms, Zhou, Tse and Li (2006) identify market orientation, performance, and ownership structure as firm-level measures of awareness, motivation and capability, respectively.

The AMC perspective was initially framed in the context of a firm's response to an attack by a rival. For example, Yu and Cannella (2007) show that AMC resource- and market-related factors are associated with the response speed of a multinational enterprise to an attack by a rival. In an evaluation of drivers of pair-wise attacks and responses between a focal firm and its rival in

the airline industry, Chen, Su and Tsai (2007) find that firm-level AMC factors influence perceived competitive tension and the intensity of a firm's attack on its rival.

Since these studies, the AMC framework has been extended and applied to various aspects of inter-firm rivalry, specifically to competition among firms as a group rather than one-to-one rivalry between attacker and responder. Cui, Meyer and Hu (2014) use the framework to investigate what drives firms to engage in actions aimed at catching up with established market leaders. They identify market structure as a firm-level construct for both awareness and motivation, financial slack for motivation and capability, and find managerial experience and governance structure to be important for all three AMC characteristics. In a study of timing of firm action in a merger wave, Haleblian, McNamara, Kolev and Dykes (2012) use the AMC framework to explain competitive behavior initiated by one firm towards competitors as a group. They hypothesize that smaller firm size/scope, and greater technology/marketing intensity are associated with increased awareness, smaller scope is associated with increased motivation, and greater financial slack and performance are associated with increased capability to act early in a merger wave.

Our analysis is most closely related to these latter studies, as we investigate the likelihood that a given firm will be first mover among all industry incumbents to invest in China. Using the insights from previous literature outlined above, we summarize how different firm attributes relate to AMC components in Table 1 and use this paradigm to develop testable hypotheses in the next section.

3. Hypothesis Development

3.1 Application of AMC Framework to First Mover Positioning

We investigate the likelihood that a given firm will be the first among industry incumbents to invest in China using the AMC perspective, which is particularly suitable for framing the firm

characteristics associated with exploiting first mover advantages. We expect that the likelihood of being first in one's industry to invest in China is increasing in (1) a strategic orientation towards identifying new investment opportunities (*awareness*); (2) attributes that enhance incentives to continuously assess the costs and benefits of external expansion and act quickly to pursue viable opportunities (*motivation*); and (3) decision-making processes and resources readily available to be deployed in pursuit of new investment opportunities (*capability*). Following the relation between these drivers of inter-firm rivalry and specific firm attributes outlined in Table 1, we develop our hypotheses below.

3.1.1. Scope and Scale of Operations

Small size can make firms more vulnerable to the external environment, and so increase their motivation to respond quickly to both threats and opportunities. We hypothesize that smaller firms are more motivated to initiate competitive actions within their industry because they have an aggressive, survival instinct to seek and exploit new opportunities. Chen and Hambrick (1995) find empirical support for this hypothesis in attack and response behaviors in a sample of airline companies, and Haleblan et al (2012) find that small firms are more motivated to be first movers in merger waves. Similarly, diversified firms, which have more bureaucratic layers and greater insulation from external threats, can have compromised decision-making capability to respond to new opportunities compared to their single-segment counterparts (Haleblan et al, 2012). We note that our emphasis here is on what motivates the *timing* of an action rather than the action itself (Schoenecker and Cooper, 1998; Chang and Rhee, 2011). In this context, we contend that

relatively larger size and greater diversification can promote inertia that reduces the motivation and capability to act early with respect to new investment opportunities.²

Hypothesis 1: Firms with smaller scale and scope of operations are more likely to pioneer industry investment in a new market.

3.1.2. *Multinational Experience*

The extent of international investment experience will influence firms' awareness and capability to be first mover in a new geographic market. Compared to industry counterparts that operate only in one geographic segment, multinationals have a mindset that enhances awareness of new foreign investment opportunities. Gaba, Pan, and Ungson (2002) find that firms with international experience are well-positioned to take advantage of new opportunities in overseas markets. This willingness to be first movers in a new geographic market likely stems from confidence that the learning from existing multinational operations transfers to a new geographic region. Further, this stock of learning enhances capability to pioneer new foreign investment. For example, firms with more global experience (such as The Gillette Co. discussed above) are better able to bridge informational uncertainties and be pioneers among industry peers when expanding in risky new markets (Delios and Henisz, 2000). Multinational firms have better capability to cope with liabilities associated with foreignness, and thus are able to respond more quickly to competitive opportunities in foreign markets (Erramilli, 1991; Delios and Beamish, 2001; Yu and Cannella, 2007). Thus, we expect that firms with experience in multinational operations will have greater awareness of, and capability to lead, investment in new geographic markets.

Hypothesis 2: Firms with experience in multinational operations are more likely to pioneer industry investment in a new market.

² We note the possibility of an alternative view that larger and diversified firms have greater capacity to absorb risk because of a coinsurance effect (Hann, Ogneva and Ozbas, 2013) and are therefore more likely to undertake uncertain investments. However, as noted above, our emphasis here is on the *timing* of the action, rather than the action itself.

3.1.3. *Financial Flexibility*

Early entry allows firms to capture first mover advantages in relation to their domestic rivals. However, it is not without cost. Firm investment is sensitive to financial capability, and this effect is magnified in the presence of uncertainty and irreversibility (Bloom, Bond and Van Reenen, 2007; Baum, Caglayan and Talavera, 2010). A firm's financial capability will influence its decision to be first mover in international expansion because early entry implies higher transaction costs associated with greater informational uncertainty. When uncertainty levels impose significant expected costs in markets with unfamiliar cultural, linguistic, and demand characteristics, followers can benefit from lessons learned by their predecessors, taking a "wait-and-see" approach (Tihanyi et al., 2005). Firms with financial flexibility not only have an internal capital market that can buffer cash flow volatility, they also have greater capability to access external capital markets if needed to fund new investments. For example, Hout et al (1982) show how Honda strategically increased financial leverage to forge ahead of competitors with global expansion. In contrast, financially constrained firms are unlikely to lead investment in an uncertain or unknown market because such investments can increase cash flow volatility and potentially compromise value. In this context, we expect that firms with greater financial slack or flexibility have more capability to make first mover investments in China.

Hypothesis 3: Firms with greater financial flexibility are more likely to pioneer industry investment in a new market.

3.1.4. *Product Market Orientation*

Firms with a strategic orientation to penetrate markets ahead of competitors have an enhanced awareness of, and motivation to pursue, new foreign expansion opportunities. These firms are actively seeking to differentiate themselves from competitors, and therefore have greater

outward focus and aggressively pursue new opportunities (Zahra and Covin, 1993; Schoenecker and Cooper, 1998; Spanos, Zaralis and Lioukas, 2004; Haleblan et al, 2012). This orientation towards product market leadership increases the probability of pioneering industry investment in a new geographic market.

Hypothesis 4: Firms with higher product market orientation are more likely to pioneer industry investment in a new market.

3.1.5. Production Cost Structure

Scale and scope of operations (discussed above) are structural factors that can influence the decision to pioneer industry investment in foreign markets. Input cost structure, specifically relative size of the labor force, is an additional factor that can motivate early investment in locations with low-cost labor (Spencer, 2008). For example, low-cost sourcing was an important motive for early capital investments by multinational enterprises in Eastern Europe (Estrin, Hughes, & Todd, 1997). These cost-saving considerations can motivate a firm to be first in its industry to invest in China, and we expect firms with relatively higher labor costs to be first-mover investors in China as they pursue lower-cost labor.

Hypothesis 5: Firms with higher input cost structure are more likely to pioneer industry investment in a new market.

3.1.6 Asset Structure

Firms investing in a new geographic market face a less familiar and more uncertain environment compared to expansion via internal capital investment or domestic acquisitions. Asset structure can mediate the investment timing decision in such environments where uncertainty is high in at least two ways. First, firm-specific assets provide unique ownership advantages, such that it is more difficult for competitors to copy investment strategies, and thus contain an embedded option to delay investment in an uncertain environment (Rivoli and Salorio, 1996). Second,

investment in firm-specific assets is difficult to reverse, thus providing fewer abandonment options; this will motivate firms to wait for some resolution of uncertainty before entering a risky new market (Pindyck, 1991; Dixit and Pindyck, 2000). This constraint arising from lack of flexibility in the asset structure is consistent with Lieberman and Montgomery (1996). The authors describe firms with high asset specificity as possessing *incumbent inertia*: locked into a specific set of assets and somewhat organizationally inflexible. In contrast, firms that successfully compete globally are able to identify and exploit strategic options that increase flexibility in responding to exogenous uncertainties (Ghoshal, 1987).

In sum, firms with low asset specificity have assets that are less proprietary or that easily trade in secondary markets. Thus, they have embedded abandonment options, which enhance their motivation to invest in an uncertain environment ahead of competitors. In this context, we expect that the likelihood of being first among peers to invest in China is increasing in the presence of abandonment options in a firm's asset structure.

Hypothesis 6: Firms with abandonment options embedded in their asset structure are more likely to pioneer industry investment in a new market.

3.2. Entry Mode Leadership Positioning

We extend our analysis to investigate the initial choice made by both leader and follower firms with respect to entry mode. In establishing an initial investment presence in China, firms face the choice between joint ventures, a partner driven mode that provides risk-sharing and ownership flexibility, or wholly-owned operations, an investment mode that provides control (Folta, 1998; Li and Li, 2010). We are specifically interested in firm characteristics associated with initial entry with wholly owned entities versus joint venture partnerships.

Asset structure is a key moderating factor in the choice between control and flexibility in the presence of exogenous uncertainty (Rivoli and Solario, 1996; Paul and Wooster, 2008). Indeed,

the growth and competitive advantage of the firm is often a function of its ability to mobilize, sustain, and expand internal and external resources and capabilities that are rare, valuable and difficult to imitate or substitute (Barney, 1991). Multinationals are more likely to establish wholly owned operations when internalization and ownership advantages are more beneficial than the formation of local partnerships or licensing agreements (Morck and Yeung, 1991). In uncertain environments, firms are more likely to choose ownership control via wholly-owned investments when they have significant firm-specific assets because of the need to internalize resource capabilities (Caves, 1971). In this context, we expect that firms with high asset specificity will be more likely to choose wholly owned operations as their initial mode of entry.

Hypothesis 7: Firms with greater asset specificity are more likely to initiate investment with entry modes that offer control over flexibility.

4. Sample and Data

4.1. Sample Construction and Entry Patterns

We obtained the names of firms with a presence in China between 1980 and 2005 from various editions of the “Directory of American Firms Operating in Foreign Countries,” compiled by Uniworld Business Publications, Inc.³ We deleted all non-publicly traded firms because of lack of publicly available financial information. Financial firms were also deleted due to systematic differences in the nature of their assets which would render cross-sectional comparisons with industrial firms invalid. Finally, we delete firms with missing book value of assets on Compustat, leaving a usable sample of 404 firms. To determine the timing and entry mode for each firm, we used the *Lexis-Nexis Academic Universe* database to search for specific announcements of initial

³ We chose 1980 as the starting year in our sample because, in modern times, expansion by US companies in China became possible after China’s Open Door policy was instituted in 1979. Our data ends in 2005 mainly out of concern that the events leading to the 2008 global financial crisis, which began in the U.S. with the 2006 housing crisis, may introduce bias our sample (Gil-Pareja et al., 2013).

firm presence in China. We collected all announcements of unique investments in China by each sample firm, and classified each of these according to whether they are a joint venture, wholly owned subsidiary, acquisition of an existing company, new plant, or representative office. The final sample comprises 368 unique publicly traded companies.

Figure 1 shows that the manufacturing companies comprise 73% of the sample. The second largest sector is services. Interestingly, while service companies were present in China since the early 1980s, this sector has a low frequency of observations before the Asian financial crisis in 1997. In our sample, the prevalence of service-sector companies expanding operations in China begins in 1998, possibly encouraged by China's preparations toward WTO accession in 2001, and remains consistently high thereafter.

Figure 2 shows the frequency of entry by year for firms in the full sample and also for firms that were first in their 4-digit SIC industry to invest in China (leaders). Overall, entry frequency increased from 1980-1985 and then declined in the period 1989-1991. This latter period coincides with the political instability surrounding the Tiananmen Square incident and may have rendered China a less appealing investment destination relative to the newly independent countries of Central and Eastern Europe and the countries of the former Soviet Union (Paul and Wooster, 2008). The second noticeable trend in Figure 2 is that the frequency of entry peaked in 1995 and significantly declined between 1996 and 1999, which coincides with a period of macroeconomic instability. In 1995, amid rising inflation, Chinese policymakers engaged in efforts to cool down economic activity, including measures such as restricting lending (Murphy, 1995). This was followed by the 1997 Asian financial crisis which considerably impacted investment in China.

Figure 3 shows the mode-of-entry patterns for five types of investment: wholly owned subsidiary, joint venture, new plant, acquisition, or representative office. The dominant mode of

investment is joint ventures (41%). This is not surprising since, as part of China's Open Door policy reform in 1979, foreign direct investment was officially encouraged in the form of joint-venture operations. However, while this was the officially sanctioned method during the 1980s, joint ventures did not lose popularity when wholly owned enterprises (WOEs) were allowed in the early 1990s (He, 2003; Mechem, 2004). The second largest category in terms of entry mode is held by "representative offices" which constitute 28% of the sample. In general, this mode of entry allows companies to set up a "toe-hold" presence and explore the investment environment for further opportunities. Other modes of entry, including acquisitions, wholly owned subsidiaries, and new plant investments, together comprise 31% of the sample.

Figure 4 shows the frequency of leader and follower firms by province. The top three destinations for both leaders and followers are Beijing, Shanghai and Guangdong and the latter is the only province where the number of leader firms exceeds the number of follower firms. The pattern illustrated in Figure 4 is not surprising. Metropolitan areas such as Beijing and Shanghai have traditionally served as preferred destinations for foreign companies due to agglomeration spillovers and relatively better business infrastructure (Tan and Meyer, 2005). On the other hand, Guangdong's emergence as a top destination for foreign firms is attributable to political, cultural and economic factors. In the early 1980s, this province was chosen as the forerunner of the 1979 Chinese Open Door policy. This political designation coupled with the entrepreneurial orientation of its local leaders, produced an institutional framework that was the most progressive among all provinces in China. The resulting inflow of foreign direct investment and economic growth throughout the 1980s and 1990s was impressive not only in comparison to other regions in China, but also other Asian countries (Taube and Ögütçü, 2002). Given the concentration of sample firms in the top three destinations illustrated in Figure 4, we explore in later analysis how factors that

determine industry leadership differ between firms that first set up presence in Beijing, Shanghai and Guangdong, versus those that invested in other provinces.

4.2. Dependent Variable

We construct the binary variable LEADER by identifying the first firm in our sample from a given four-digit SIC industry category to announce investment in China. This variable is used as the dependent variable in probit models that estimate the likelihood of leading industry investment into China. We also construct indicator variables for initial mode of entry: joint venture, wholly owned subsidiary, new plant, acquisition, or representative office. These variables are used as dependent variables in multinomial probit models of likelihood of modes of entry that offer ownership control (subsidiary, new plant, acquisition, representative office) versus the baseline of ownership flexibility (joint venture).

4.3 Test Variables

We hypothesize a negative relationship between first mover likelihood and a firm's scale and scope of operations. SIZE, measured as the natural log of the firm's book value of assets, measures the firm's scale of operations, and BUSDUM, measured by a dummy variable that equals one if the firm has more than one business segment, measures the firm's scope of operations. The test variable for multinational experience is GEODUM, a dummy variable denoting whether a firm is an existing multinational. DEBT, measured as long-term debt scaled by book value of assets, is the test variable for financial flexibility. The hypothesized sign is positive for GEODUM and negative for DEBT.

Firms with greater product market orientation are more aware of, and motivated to pursue, market seeking investments. We hypothesize that such firms are more likely to be first in their

industry to invest in China. The following proxy variables are commonly used in the literature to represent market seeking. ADV, measured as advertising expenditures scaled by sales, is a proxy for ex-ante marketing seeking (Spanos et al, 2004). SALEGR, computed as compounded annual growth rate in sales for the two years preceding the year of entry, is a proxy for recent ex-post realization of marketing efforts (Zahra and Covin, 1993). MKTSH, computed as firm sales divided by U.S. industry sales, is a proxy for cumulative realization of market seeking efforts. Positive signs are predicted for all three variables.

We hypothesize that higher input cost structure will have a positive impact on the likelihood of being first mover. With specific regard to first mover investment in China, we expect labor intensity to be the firm characteristic that motivates entry timing. To test this hypothesis, we construct the variable (EMPL), measured as number of employees scaled by sales, and predict a positive coefficient.

Our final hypothesis for first mover likelihood is that firms with embedded abandonment options in their asset structure are more likely to lead industry investment in China. We test this hypothesis using variables that measure asset specificity, arguing that the option to abandon is decreasing in asset specificity. Research and development expenditures scaled by sales (R&D) and the ratio of market value of assets to book value of assets (MTB) are commonly used as proxies for firm-specific, intangible assets (Morck and Yeung, 1991; Lang and Ofek, 1995; Mishra and Gobeli, 1998; Berry, 2006). We expect lower asset specificity to increase the likelihood of a firm leading industry investment into China, and thus hypothesize negative signs on both these variables.⁴ With respect to mode of entry choice, we expect firms with high asset specificity (proxy

⁴ We note that an asset intangibility is likely decreasing in employee intensity, and in this sense the use of this variable is related to predictions for labor intensity above.

for internalization advantages) to choose an entry mode that offers greater control (wholly owned) over ownership flexibility (partner driven / joint venture).

4.4 Control Variables

From an industrial organization perspective, firms in highly concentrated industries are more likely to expand and compete for market share in international markets (Kogut and Chang, 1991). Thus, we include the variable NUMFIRMS, number of companies in a firm's domestic (U.S.) 4-digit SIC industry, as a control variable for the effect of industry concentration on leadership positioning. We also include the following provincial characteristics as control variables. WAGES is average province wages scaled by the national average wages, SEZ is a dummy variable denoting whether the province had a Special Economic Zone at the time of investment, GDPCAP is provincial gross domestic product per capita, and HIGHWAY measures provincial highway density. We also include regional dummy variables in all models to control for fixed provincial effects that are invariant with time.

Our use of provincial characteristics as key control variables is motivated by the literature, which outlines a number of locational variables that influence a specific choice of initial entry mode in a foreign market. Sun, Wilson and Yu (2002) find wages, infrastructure, market demand and size, labor quality and cost, political risk, openness to outside trade, and GDP, to be important variables. Quazi (2007) finds a large impact of economic freedom on FDI inflows to East Asian countries. Shapiro, Tang, and Ma (2007) find that location choice for equity joint ventures is significantly determined by wages, FDI stock, education, and presence of special economic zones. Additional studies on locational impact of investment flows include proximity to markets and suppliers (Amiti and Javorcki, 2008), governance quality and corruption (Cole, Elliott, & Zhang,

2009), labor quality, economic zones, and distance (Gao, 2005), and patent certification volume, share of state-owned business, GDP, wage, and road density (Kawai, 2009).

4.5 Summary Statistics

Table 2 contains summary statistics for the full sample and for separate subsamples of leader and follower firms, where leader is defined as first in the industry to invest in China. There are notable differences between leaders and followers. Leader firms have lower mean MTB and R&D, which are both commonly used as proxy variables for intangible, firm-specific assets. Leaders have higher ADV and MKTSH, suggesting that marketing intensity influences the likelihood of leading industry international investment. Leaders also have more international experience denoted by the dummy variable GEODUM, and appear more likely to invest in provinces with relatively lower wages. All firm-level data are obtained from the Standard and Poor's Compustat database, and all province level data are obtained from the China Data Online database, which is the online version of the China Statistical Yearbook.

5. Estimation Framework

5.1. Likelihood of Leadership

Consider a firm i operating in a 4-digit industry j and considering market expansion at time t . We define the binary variable $LEADER_{ij}$ such that

$$LEADER_{ij} = \begin{cases} 1 & \text{if } LEADER_{ij}^* > 0 \\ 0 & \text{if } LEADER_{ij}^* \leq 0 \end{cases} \quad (1)$$

where $LEADER_{ij}^*$ is unobserved and represents the attractiveness to firm i of being first among industry peers to expand operations in China. We assume that a positive value for the latent variable corresponds to a favorable combination between firm and industry characteristics and location advantages such that the firm initiates market expansion in China ahead of its peers:

$$\begin{aligned}
LEADER_{ij}^* = & \beta_0 + \beta_1 MTB_{it} + \beta_2 SALESGR_{it-2} + \beta_3 R\&D_{it} + \beta_4 ADV_{it} + \beta_5 EMPL_{it} + \\
& \beta_6 SIZE_{it} + \beta_7 DEBT_{it} + \beta_8 MKTSH_{it} + \beta_9 GEODUM_{it} + \beta_{10} BUSDUM_{it} + \\
& \beta_{11} NUMFIRMS_{jt} + \beta_{12} SEZ_{kt,t-1} + \beta_{13} WAGES_{kt} + \beta_{14} GDPCAP_{kt} + \\
& \beta_{15} HIGHWAY_{kt} + \sum \gamma_k (Regional\ Controls) + \varepsilon_{ijt}
\end{aligned} \tag{2}$$

Equation (2) is estimated as a probit model for the full sample as well as four sub-samples. The first two sub-samples correspond to early entry (1980-1992) and late entry (1993-2005). This sample split is largely motivated by the changes in the political, regulatory, economic reforms initiated in 1992 that favored economic growth and foreign direct investment (for a good discussion of the effects of such reforms, see Graham and Wada, 2001). The second two subsamples correspond to firms investing in Beijing, Shanghai and Guangdong compared to the rest of the provinces, motivated by the pattern illustrated in Figure 4 and discussed earlier. Covariates in equation (2) are as described above.

5.2. Choice of Entry Mode

Our analysis of how firms chose to expand operations in China begins with a bivariate probit investigation into whether factors that determine the order of entry are also simultaneous determinants of entry mode choices. Studies such as Isobe, Makino, and Montgomery (2000) and Pan, Li, and Tse (1999), emphasize that entry mode and resource commitment choices in China may have important consequences for any first-mover advantages that industry leaders may accrue. Thus, the bivariate probit model allows us to investigate if endogenous switching is a concern in our sample.

We next proceed to examine the choice of expansion mode as follows. Consider a sample of N firms where each firm i chooses expansion alternative j among M mutually exclusive entry

mode alternatives. In the present context, there are five alternatives corresponding to representative offices, joint ventures, acquisitions, new plants and wholly owned subsidiaries. We assume that the attractiveness of alternative j is a function of firm, industry and province level characteristics and we apply an unordered discrete choice model to evaluate how such characteristics affect the likelihood of transition between different expansion strategies. Specifically, we posit that unobserved profit for firm i choosing alternative j is given by

$$\pi_{ij}^* = X_i \beta_j + \varepsilon_{ij}, \quad j = 1 \dots M, i = 1 \dots N \quad (3)$$

where X is a matrix of firm, industry and province covariates as defined above which, together with the coefficient vectors β_j , comprise the deterministic component in equation (3). Category j is chosen if π_{ij}^* is highest for alternative j which means that the observable dependent variable of firm i 's mode of expansion (MOE_i) is linked with its latent counterpart π_{ij}^* via:

$$MOE_i = \begin{cases} j & \text{if } \pi_{ij}^* = \max(\pi_{i1}^*, \pi_{i2}^*, \dots, \pi_{iM}^*) \\ 0 & \text{otherwise} \end{cases} \quad (4)$$

The probability of choosing alternative j can then be written as:

$$\begin{aligned} \Pr[MOE_i = j | X_i] &= \Pr[\pi_{ij}^* > \pi_{i1}^*, \dots, \pi_{ij}^* > \pi_{i(j-1)}^*, \dots, \pi_{ij}^* > \pi_{i(j+1)}^*, \dots, \pi_{ij}^* > \pi_{iM}^*] \\ &= \Pr \left[\begin{array}{l} \varepsilon_{ij} - \varepsilon_{i1} > X_i(\beta_1 - \beta_j), \dots, \varepsilon_{ij} - \varepsilon_{i(j-1)} > X_i(\beta_{(j-1)} - \beta_j), \\ \dots, \varepsilon_{ij} - \varepsilon_{i(j+1)} > X_i(\beta_{(j+1)} - \beta_j), \dots, \varepsilon_{ij} - \varepsilon_{iM} > X_i(\beta_{1M} - \beta_j) \end{array} \right] \quad (5) \end{aligned}$$

We estimate equation (5) as a multinomial probit using joint ventures as the baseline alternative. The multinomial approach has an advantage over other ordered choice models in that it prevents us from formulating an a priori ranking on the patterns of expansion and avoids the independence of irrelevant alternatives assumption.

6. Results and Discussion

6.1. Leading Industry Investment

Table 3 contains results for the likelihood of leading industry investment into China. The first two columns report coefficients for the full sample. Column (1) contains results with only firm characteristics as explanatory variables, and Column (2) includes provincial characteristics.⁵ The next two columns report results for subsamples of firms entering early in the sample period (before 1993) compared to later entrants. The final columns report results for the subsample of entrants in the top three provinces (Beijing, Shanghai, and Guangdong) compared to the rest of provinces.

6.1.1 Full Sample Analysis

We begin with analysis of the full sample, reported in the first two columns of Table 3. The first hypothesis predicts that smaller scale (*SIZE*) increases motivation to be first mover in new opportunities and smaller scope (*BUSDUM*) increases capability for decision-making agility associated with being first among peers to invest. The variable *SIZE* is significantly negatively related to the likelihood of leading industry investment, consistent with our expectation that smaller firms are more motivated to exploit expansion opportunities. The coefficient on *BUSDUM* is insignificant, indicating that it is not a meaningful determinant of first mover investment in the sample overall.

The second hypothesis is that firms with international experience have more awareness and capability to lead their industry counterparts with entry into China. The positive and significant coefficient on *GEODUM* confirms this prediction, indicating that existing multinational

⁵ All specifications were estimated with a constant which is not significant except in Column (1) and is not reported due to space considerations. All models also contain regional dummy variables.

experience positions firms to move ahead of competitors to exploit new foreign expansion opportunities. Hypothesis 3 predicts that firms with greater financial slack have greater capability both to fund new investments and to buffer cash flow volatility associated with such ventures. However, insignificant coefficients throughout on DEBT indicate that this is not an important factor in the decision to be first to enter China.

The fourth hypothesis predicts that a market seeking orientation increases awareness of new opportunities and motivation to lead industry peers in exploiting them. Coefficients on ADV and SALEGR are insignificant throughout, however, the coefficient on MKTSH is positive and highly significant. Thus, cumulative marketing seeking, denoted by higher sales relative to domestic industry rivals, increases the likelihood of leading industry investment. The result is intuitive in the sense that incumbent market share leaders have a strategic orientation not only to secure their domestic leadership position, but also to enhance their international competitiveness, leading to heightened awareness of new investment opportunities and motivation to pursue them.

The positive coefficient on EMPL in Column (1) is consistent with our fifth hypothesis that firms with greater labor intensity will be more motivated to be first among industry peers to invest in China. We note, however, that the EMPL variable loses significance in Column (2), where the provincial variable WAGES is significantly negative. The loss of significance on the firm-level employee intensity suggests that the province variable captures a similar low-cost motive for leading entry as does the firm-level variable.

The final hypothesis is that firms with embedded abandonment options are more motivated to be first in their industry to invest in China. The significantly negative coefficient on R&D is consistent with this hypothesis and suggests that relatively lower asset specificity, denoting greater implicit abandonment options, facilitates first mover investment. In this context, firms with greater

asset specificity likely consider following to be strategically advantageous and yield to early entrants who pave the way and resolve informational uncertainties. We note, however, that the coefficient on MTB is insignificant, indicating that it is not a statistically important factor in the decision to lead industry investment for the sample overall.

As a sensitivity analysis of the results discussed above, we also estimated the models in Columns (1) and (2) with interaction effects. Specifically, in untabulated results, we included interaction terms to capture the moderating role of variables related to motivation on firms' awareness and capability following Chen, Su and Tsai (2007). We caution that since we use a binary response regression, the interaction effects in our specification do not have interpretations that are straightforward or comparable to those discussed in Chen et al. (2007). Nevertheless, we note that we did not find evidence to support significant interaction effects. With respect to the interactions between variables related to capability and motivation components, we did find that significance obtained most consistently with respect to MTB and served to increase its statistical significance in the predicted direction.

6.1.2. Early versus Late Entry

We define an industry leader as the first firm in a 4-digit SIC industry to invest in China over our entire sample period from 1980-2005. However, it is possible that different characteristics explain the leadership decision earlier in time compared to later in the sample period. Firms that lead earlier in time are arguably more aggressive and willing to take risks than those that lead later in time. We investigate whether the characteristics of early and late leaders differ by splitting the sample into early (1980-1992) and late (1993-2005) entry. We choose this split because 1992 was the year when China began to officially encourage wholly owned subsidiaries by foreign firms,

and thus the post-1992 period potentially marks a shift in the determinants of leading industry investment.

Results are presented in Columns (3) and (4) of Table 3. Both early and late subsamples have significant positive coefficients on MKTSH and significant negative coefficients on SIZE and R&D, similar to results for the full sample. This indicates that the impact of these variables on the decision to lead is not confined to a specific time period. In contrast, the EMPL variable is significant only in the early period. We interpret this as evidence that the motive to lower labor costs dominates in the subsample of firms leading industry rivals with early entry into China. It is possible that these firms perceived a strategic advantage to being the first to enter and establish relationships that would position them to exploit lower cost labor. We also see that the international experience dummy, GEODUM, is positive and significant for early leaders only. This notable result indicates that firms with experience doing business abroad were able to leverage that knowledge base to lead early entry into the new market. Thus, these firms enjoyed a strategic advantage over industry peers as they applied learning from operations in other foreign markets to the establishment of operations in a new geographic region.

With respect to provincial characteristics, we have the striking result that the coefficients on SEZ enter with opposite signs for the early and late models. Although we do not form hypotheses on this variable, the result is noteworthy. The special economic zones were created by the Chinese government especially to encourage high-tech, technology intensive investment. The negative coefficient on this variable in the early sample indicates that investment by early leaders in a given province was not conditional on the incentives provided by the SEZ. In contrast, the positive coefficient on SEZ in the late sample suggests that late leaders were significantly

motivated by the incentives offered for investors in high-tech and technology intensive industries, in a time period when they had more flexibility to choose ownership control.

6.1.3. Investment in Beijing, Shanghai and Guangdong versus Rest of Provinces

Historically, some Chinese provinces that were more open attracted a greater flow of foreign investment, resulting in more rapid transition to a “market-based” approach to doing business (Zhou, Tse and Li, 2006). Indeed, inter-provincial variation in openness of Chinese legal environments and financial markets influenced the degree to which Chinese firms engaged in outward FDI (Sun, Peng, Lee and Tan, 2015). In this context, we conduct subsample analysis in columns (5) and (6) to further investigate the impact of regional differences on the factors associated with a U.S. firm being first to invest in China. As illustrated in Figure 4, the top three destinations for both leader and follower firms in our sample are Beijing, Shanghai, and Guangdong. We investigate whether there are meaningful differences between firms that initiate entry in these provinces compared to the rest. Results for the top three destinations subsample are reported in Column (5), and results for the remaining provinces presented in Column (6).

We focus discussion on notable differences between the subsamples. First, the coefficient on SIZE is significant only for firms investing in the rest of provinces. This suggests that their relatively smaller size motivated firms to explore opportunities for growth away from the top three destinations in Beijing, Shanghai, and Guangdong. It is possible that these relatively smaller firms have an entrepreneurial orientation that motivates them to seek out non-mainstream opportunities, where they might face less competition from larger firms.

It is noteworthy that the estimated coefficient on BUSDUM is significant in both Column (5) and Column (6) but of opposite sign, which likely accounts for the overall insignificant result for this variable in earlier models. The negative coefficient on this variable in Column (5) is

consistent with our hypothesis that the flexibility in organizational structure associated with single segment operations increases the likelihood of leading industry investment. The unexpected positive sign on BUSDUM in Column (6) indicates having multi-segment operations (greater scope) increases the likelihood of leading investment in the less popular destinations. It is possible that successful integration of multiple business segments within a company's structure results in tacit knowledge about how to best acquire and manage local opportunities. Consequently, firms with such knowledge may have more capability to pursue expansion into provinces where the institutional framework is less developed relative to the top three destinations. Finally, we note that the coefficients on MTB is significant only in the Beijing, Shanghai and Guangdong subsample. Together with the significance of R&D in this subsample only, it indicates that asset specificity influenced the first mover decision only in the top three provinces, perhaps because leader firms made more significant investments in these more popular destinations.

6.2. Entry Mode Choices

Table 4 contains coefficient estimates for a multinomial probit model in which the likelihood of wholly owned entry mode choices (subsidiary, new plant, acquisition) and representative office are evaluated relative to a base case of entry via joint venture.⁶ The joint venture investment option provides ownership flexibility, allowing firms the option to increase commitment over time as they learn. In contrast, WOE's provide ownership control. As noted earlier, although joint venture was the originally sanctioned mode of investment it continued to be a popular choice by U.S. firms even as WOE's were encouraged post 1992.

⁶ As a precursor to this estimation we investigated whether entry mode choice may be endogenous with the decision to lead industry investment. Such simultaneity may render our model mis-specified, however, we found that the choices for mode of entry in our sample are not significantly affected by the probability of a firm being a leader. Results are available upon request.

Panel A of Table 4 contains results for the full sample, and Panel B contains results for leader and follower subsamples. We focus our discussion on results for WOE, since our hypothesis is formed for this entry choice versus joint venture, but note that in most cases the coefficients on representative office are of the same sign and significance. In addition to the test and control variables discussed above, the models also include a dummy variable INDMFG that equals one if the firm is from a manufacturing industry. This variable is included to control for its importance in the entry mode choice.

Our primary focus is whether there are differences between leaders and followers in the determinants of entry mode choice, however, we begin by summarizing the full sample results in Panel A. Our hypothesis for entry mode choice is that firms with greater asset specificity will be more likely to initiate investment with wholly owned operations. The positive and significant coefficient on MTB for all entry modes is consistent with this hypothesis. It indicates that firms with greater intangible assets are likely to choose to initiate investment on their own, forgoing the flexibility of partner driven investment. The other proxy variable for intangible assets is R&D, however, the coefficient is insignificant.

We note that the negative coefficients on SIZE and BUSDUM for wholly owned subsidiaries and new plants suggest that larger and more diversified firms are more likely to initially invest with a local partner. One interpretation is that firms with high product differentiation want quick market penetration in order to establish a position in the consumer market, and will choose a local partner rather than go it alone (Caves, 1971). The negative sign on ADV supports this conjecture, in that it suggests a market-seeking strategic orientation where firms initiate investment with a local partner to facilitate more rapid market penetration.

Panel B of Table 4 contains results on entry mode choice for subsamples of leaders and followers. We are particularly interested in whether leaders have a different strategic approach to initial entry than followers with respect to asset specificity. For leaders, we see that higher MTB significantly increases the likelihood of expansion through all forms of wholly owned operations over joint ventures. In contrast, the coefficient on MTB is insignificant throughout in the follower subsample. Our hypothesis is that firms with high MTB, indicative of internalization advantages, will choose initial entry modes that offer ownership control and allow them to internalize intangible assets. It makes sense that this effect is concentrated in the subsample of leaders, who by virtue of being industry pioneers, bear a disproportionate share of the risk of investing in an uncertain environment. For followers, having had some uncertainty resolved by leader entry, internalization is not an important factor in their mode of entry decision.

Overall, the results reveal meaningful differences between leaders and followers in the determinants of entry mode choice, suggesting that firms both strategically lead and strategically follow. We also find notable differences between leaders and followers in the impact of provincial characteristics on entry mode. Among provincial characteristics, higher highway density significantly increases the likelihood that leader firms will choose wholly owned subsidiaries, new plants, and representative offices over joint ventures, but there is no such effect for followers. This makes sense since leaders are pioneering investment into China. If they choose to go it alone, infrastructure becomes more important. In contrast, for followers, higher relative wages significantly increases the likelihood choosing acquisitions, new plants and representative offices over joint ventures, suggesting a reliance by followers on more qualified, rather than cheaper, labor as they initiate wholly owned operations.

7. Conclusion

We investigate leadership positioning by U.S. firms in China using the *awareness, motivation* and *capability* (AMC) paradigm in Chen (1996). In so doing, we make a novel contribution to the literature by applying the AMC framework to explain industry rivalry among domestic firms in foreign markets. Our analysis covers a long sample period (1980-2005) and employs a hand-collected dataset that tracks investment in China at the province level. Our primary area of investigation is the likelihood that a firm will lead industry peers in investing in China, and we find evidence consistent with the AMC perspective. Leader firms have higher market-seeking intensity, which can increase their awareness of, and motivation to pursue, opportunities for first mover positioning. Leader firms also have relatively smaller firm size and higher labor costs, attributes associated with greater motivation to pioneer industry investment in a new market. Firms with greater capability for international expansion, evidenced by experience in international operations and abandonment options in their asset structure, are more likely to lead their industry in investment.

Our hand-collected dataset includes provincial characteristics, which allows us to not only control for their effect on entry leadership, but also to investigate patterns of decision-making by province groups. This analysis reveals a notable difference in the effect of scope of operations between firms that initially invested in the top three entry frequency provinces (Beijing, Shanghai and Guangdong) compared to the rest of provinces. Specifically, for the top three provinces, we find evidence consistent with our hypothesis that the bureaucratic layers in multi-segment firms reduce capability to act early. In contrast, we find an opposite effect of this variable for the rest of provinces, suggesting that experience with managing multiple business segments appears to

increase capability to lead investment in less popular destinations, likely due to greater capacity to absorb risk.

Our secondary area of investigation is the impact of ownership advantages, denoted by asset intangibility, on entry mode choice. Here we find notable differences between leaders and followers. Asset specificity mediates the entry mode choice only for leader firms, increasing the likelihood that they choose wholly owned operations over joint ventures. This suggests that firms lead entry into China with modes of entry that allow them to internalize their resource capabilities, choosing ownership control over the flexibility of having a local partner.

This study provides new insights into how firms make decisions concerning new investments in foreign markets. Results suggest that firms strategically lead and also strategically follow. Firms exhibiting characteristics consistent with greater awareness, motivation and capability took the lead in their industry to enter China. Further, ownership advantages mattered in entry mode choices for leaders, but not for followers. These findings offer a unique perspective to the competitive dynamics literature as well as some implications for corporate managers and practitioners. Because the impact of some AMC characteristics on international investment decisions can differ from their effect on domestic expansion decisions, it is important for managers to evaluate the specific context in which relative advantages obtain before committing firm resources.

Our analysis of leadership positioning by U.S. firms in China offers implications for other countries such as, for example, the economies of the former Soviet bloc. Like China, these transition economies had a history of central planning and a time-zero event for foreign direct investment inflows which coincided with the fall of the Berlin Wall in 1989. A fruitful avenue for future research would be to test the predictions of our model with data for countries in Central and

Eastern Europe and the Newly Independent States of the former Soviet Union. Finally, cultural differences may play a role in expansion strategies, and firm characteristics such as international experience might be more important for American companies than for MNEs from other countries with respect to leadership positioning. A comparison of U.S. and non-U.S. MNEs will therefore broaden the usefulness of the results documented in our study for both practitioners and managers in other countries.

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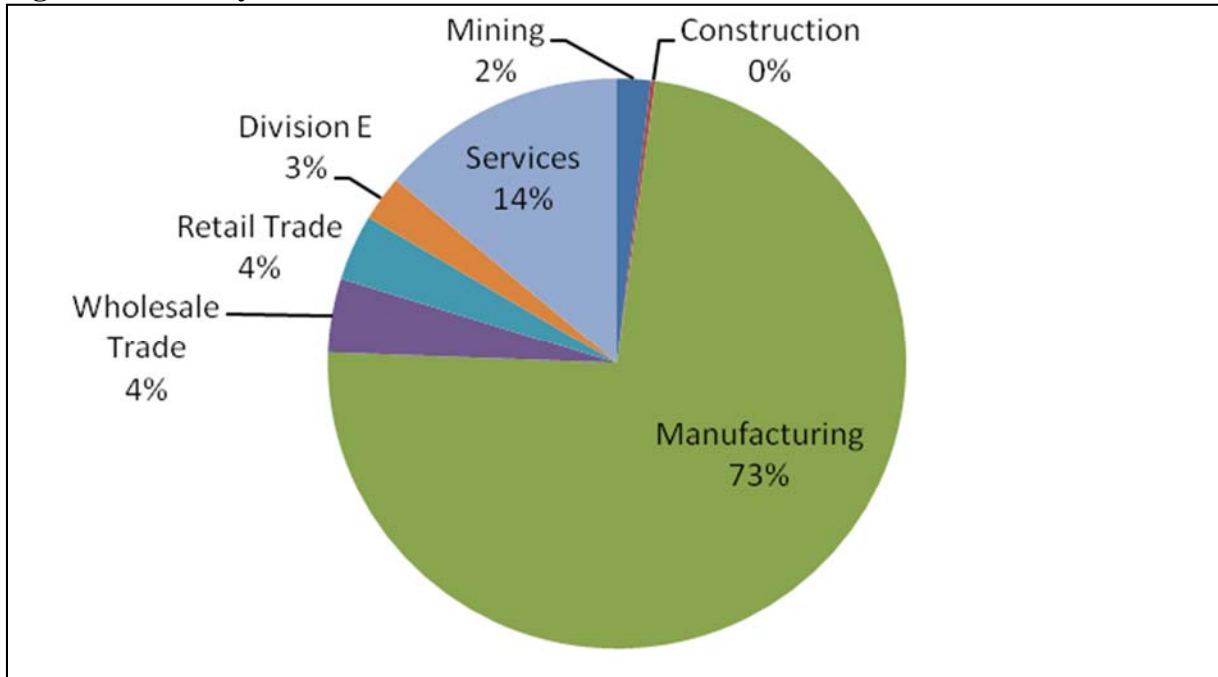
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Figure 1. Industry Distribution of U.S. Firms in China: 1980-2005



Note: Industry divisions are classified as follows. B: Mining; C: Construction; D: Manufacturing; E: Transportation, Communications & Utilities; F: Wholesale Trade; G: Retail Trade; I: Services

Figure 2. Frequency of Expansion: All Firms versus Leaders, 1980-2005

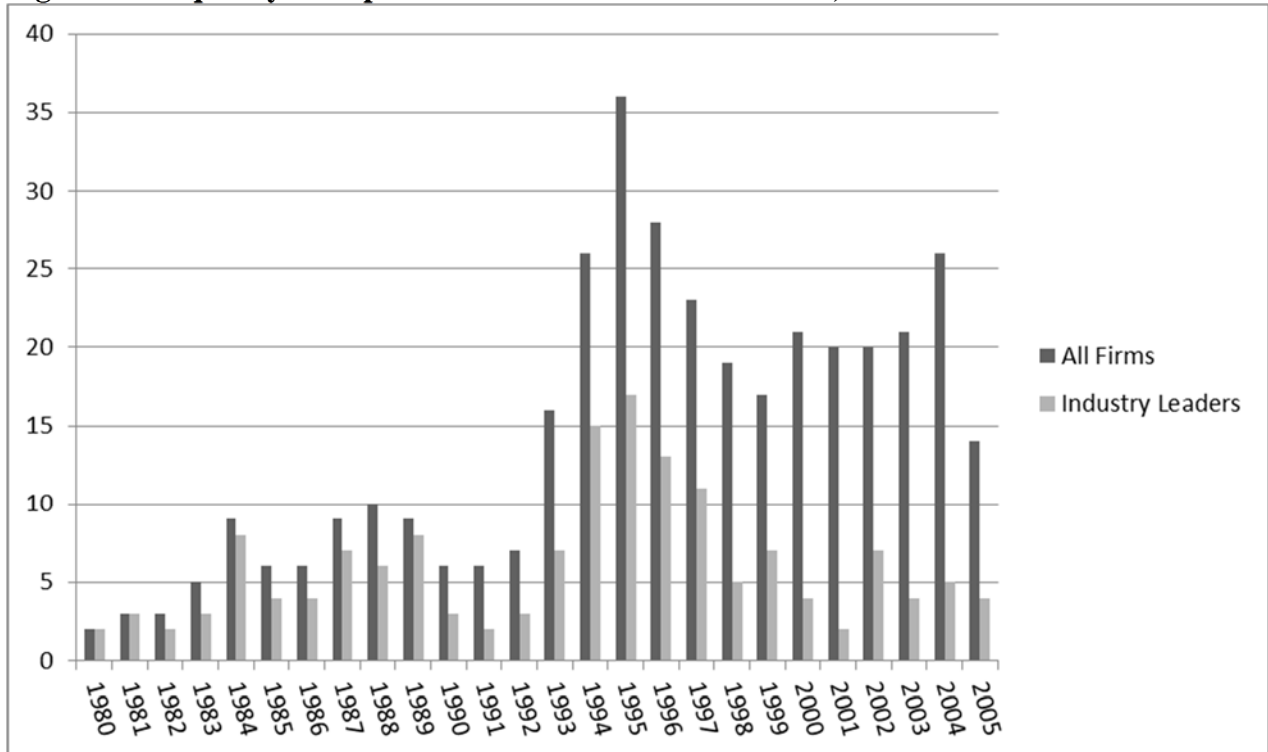


Figure 3. Mode of Entry by U.S. Firms in China: 1980-2005

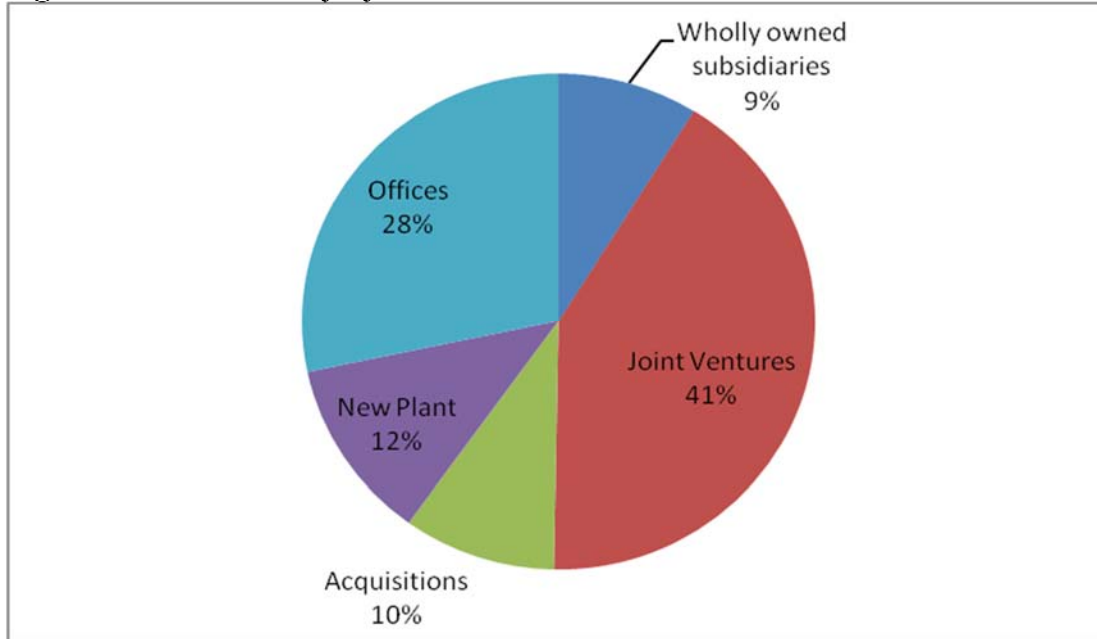


Figure 4. Leader and Follower Firms by Province

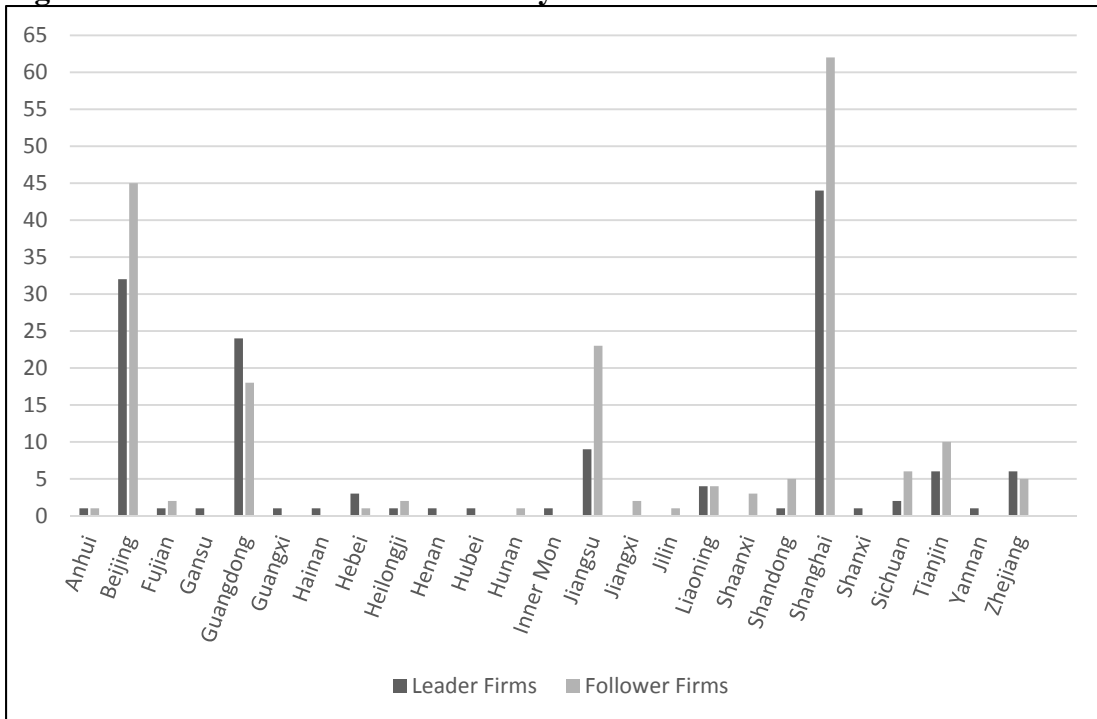


Table 1: Firm Characteristics Associated with Awareness, Motivation and Capability to be First Mover in China

| | <i>Awareness: Strategic orientation towards identifying new investment opportunities</i> | <i>Motivation: Attributes that enhance incentives to quickly pursue viable investment opportunities</i> | <i>Capability: Resources readily available to be deployed in pursuit of new investment opportunities</i> |
|----------------------------|--|---|---|
| Scale of Operations | -- | Smaller scale enhances motivation to exploit investment opportunities ahead of competitors | Smaller scope facilitates decision-making agility that enhances capability to respond quickly to new opportunities |
| Multinational Experience | Experience doing business abroad enhances awareness of new foreign investment opportunities | -- | Global investment experience enhances capability to bridge information uncertainties and pioneer industry investment in a new foreign market |
| Financial Flexibility | -- | -- | Financial flexibility buffers cash flow volatility and thus enhances capability to pursue potentially risky new investment opportunities ahead of competitors |
| Product Market Orientation | Strategic orientation to penetrate markets ahead of competitors promotes awareness of new investment opportunities | Market seeking orientation increases motivation to be first among competitors to exploit growth opportunities | -- |
| Production Cost Structure | -- | High input cost structure enhances motivation to be first among competitors in seeking a resource base with relatively lower costs | -- |
| Asset Structure | -- | An asset structure with embedded abandonment options enhances motivation to be first among competitors to invest in uncertain new markets | -- |

Table 2: Summary Statistics

Summary statistics for firm and province level variables for U.S. firms investing in China are presented in Column (1) for the full sample, in Column (2) for leaders, and in Column (3) for followers. An industry leader is defined as the first firm in a given 4-digit SIC category to announce expansion in China during the sample period 1980-2005. Tests for differences in means between leaders and followers in Panel A are two-tailed and correspond to * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

| | (1) | | (2) | | (3) | |
|----------|-------------|--------|-----------|---------|-----------|---------|
| | Full Sample | | Leaders | | Followers | |
| | Mean | Median | Mean | Median | Mean | Median |
| MTB | 2.25 | 1.58 | 1.92** | 1.53 | 2.47 | 1.63 |
| SALEGR | 0.19 | 0.07 | 0.12 | 0.08 | 0.22 | 0.06 |
| R&D | 0.06 | 0.03 | 0.04*** | 0.02 | 0.06 | 0.05 |
| ADV | 0.01 | 0.00 | 0.02* | 0.00 | 0.01 | 0.00 |
| EMPL | 0.01 | 0.01 | 0.01*** | 0.01 | 0.01 | 0.01 |
| SIZE | 4347 | 1206 | 3298.00 | 1224.15 | 3869.89 | 1188.03 |
| DEBT | 0.17 | 0.14 | 0.18 | 0.16 | 0.17 | 0.13 |
| MKTSH | 0.18 | 0.09 | 0.26*** | 0.18 | 0.16 | 0.04 |
| GEODUM | 0.38 | 0.00 | 0.47*** | 0.00 | 0.36 | 0.00 |
| BUSDUM | 0.42 | 0.00 | 0.47* | 0.00 | 0.39 | 0.00 |
| NUMFIRMS | 272.77 | 193.00 | 191.61*** | 127.00 | 319.79 | 285.00 |
| SEZ | 0.12 | 0.00 | 0.15* | 0.00 | 0.07 | 0.00 |
| WAGES | 1.35 | 1.25 | 1.30** | 1.18 | 1.42 | 1.38 |
| GDPCAP | 2.43 | 2.54 | 2.45 | 2.26 | 2.42 | 2.55 |
| HIGHWAY | 3.57 | 3.90 | 3.53 | 3.75 | 3.63 | 3.91 |

Table 3: Likelihood of Leading Industry Investment into China

The dependent variable equals one if the observation is for an industry leader, defined as the first firm in a given 4-digit SIC category to invest in China during the sample period 1980-2005. Independent variables are described in the Table 2 header. Columns (1) and (2) report results from the full sample with firm-level independent variables first and additionally with province independent variables. Subsample results in Columns (3) and (4) are for two time periods: Early Sample (1980-1992) and Late Sample (1993-2005). Subsample results for firms entering Beijing, Shanghai and Guangdong only are in Column (5) and those for the remaining provinces are in Column (6). Robust standard errors are in parentheses. Significance levels correspond to: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

| | Full Sample | | Early | Late | Beijing, Shanghai, Guangdong | Rest of Provinces |
|-----------------------|------------------------|------------------------|-----------------------|-----------------------|---------------------------------|------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| SIZE | -0.1234** (0.0495) | -0.1394*** (0.0499) | -0.1973* (0.1132) | -0.1153* (0.0594) | -0.0446 (0.0703) | -0.3179*** (0.0936) |
| BUSDUM | -0.0157 (0.1621) | -0.0115 (0.1628) | -0.1998 (0.3874) | 0.0512 (0.1833) | -0.5863*** (0.2206) | 0.9065*** (0.3998) |
| GEODUM | 0.3067** (0.1539) | 0.3134** (0.1560) | 0.7760** (0.3874) | 0.1182 (0.1838) | 0.2231 (0.2075) | 0.2989 (0.2739) |
| DEBT | -0.4908 (0.4659) | -0.2881 (0.4641) | -0.2490 (1.7418) | -0.0272 (0.5015) | -0.3932 (0.7441) | -0.0096 (0.5995) |
| ADV | 1.6293 (2.2613) | 0.8507 (2.1795) | -4.7000 (3.3946) | 2.8700 (3.6201) | 0.5967 (3.1996) | 1.5636 (4.5962) |
| SALEGR | -0.0689 (0.0495) | -0.0658 (0.0495) | 0.6036 (0.8603) | -0.0769 (0.0546) | -0.1635 (0.2027) | -0.0125 (0.0487) |
| MKTSH | 1.4246*** (0.4036) | 1.4440*** (0.3971) | 1.6424* (0.8968) | 1.5839*** (0.4578) | 1.8891*** (0.6133) | 1.6104*** (0.6126) |
| EMPL | 13.8984* (8.3657) | 10.1547 (7.9892) | 48.4978* (28.2002) | 5.8299 (7.2900) | 14.6954 (9.3987) | -16.3611 (20.0595) |
| R&D | -3.8219*** (1.3775) | -4.0013*** (1.4533) | -6.7382* (3.9081) | -3.5602** (1.6273) | -3.6363** (1.8195) | -3.1820 (2.0842) |
| MTB | -0.0181 (0.0223) | -0.0103 (0.0223) | 0.0294 (0.3002) | -0.0076 (0.0226) | -0.0449* (0.0258) | -0.0144 (0.0772) |
| NUMFIRMS | -0.0010*** (0.0004) | -0.0007* (0.0004) | -0.0018 (0.0015) | -0.0004 (0.0004) | -0.0004 (0.0005) | -0.0016** (0.0008) |
| WAGES | | -1.0088*** (0.3748) | -1.7951 (2.3964) | -0.7203 (0.5808) | -1.4288*** (0.4457) | 2.9575 (1.8919) |
| SEZ | | -0.0150 (0.2527) | -0.8485** (0.4186) | 0.8152** (0.3710) | -0.1581 (0.3042) | -0.0079 (0.6805) |
| GDPCAP | | 0.4029*** (0.1320) | 0.3708 (0.2539) | 0.2901 (0.2255) | 1.0897** (0.4244) | -0.8337 (0.7401) |
| HIGHWAY | | 0.0021 (0.1005) | -0.1646 (0.1690) | 0.0250 (0.1137) | 0.0873 (0.1511) | 0.0540 (0.2960) |
| <i>N</i> | 353 | 353 | 79 | 274 | 214 | 139 |
| Chi-square | 59.84 | 83.83 | 30.54 | 51.37 | 74.77 | 39.73 |
| Prob > chi2 | 0.0000 | 0.0000 | 0.0154 | 0.0001 | 0.0000 | 0.0000 |
| Log likelihood | -201.42 | -195.60 | -33.26 | -150.83 | -108.59 | -71.96 |
| Pseudo R ² | 0.1642 | 0.1883 | 0.3255 | 0.1530 | 0.2633 | 0.2251 |

Table 4: Choice of Entry Mode Determinants: Multinomial Probit Results

The dependent variable takes on the following values: 1= wholly owned subsidiary, 2 = joint venture (baseline alternative), 3= acquisition, 4 = new plant, 5 = representative office. Results are for the full sample and for subsamples of leaders and followers. Robust standard errors are in parentheses. Significance levels correspond to: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Panel A: Full Sample

| | Wholly Owned Subsidiaries | New Plants | Acquisitions | Representative Offices |
|----------|------------------------------|---------------------|---------------------|---------------------------|
| SIZE | -0.211** (0.099) | -0.142* (0.084) | -0.092 (0.098) | -0.015 (0.085) |
| BUSDUM | -0.576* (0.344) | -0.575** (0.264) | -0.370 (0.301) | -0.791*** (0.252) |
| GEODUM | 0.357 (0.312) | 0.202 (0.271) | 0.362 (0.307) | 0.251 (0.248) |
| DEBT | 0.759 (0.902) | 0.409 (0.708) | 1.013 (0.802) | -0.349 (0.853) |
| ADV | -35.678*** (10.848) | -4.516 (4.736) | -7.667* (4.123) | -14.549*** (4.912) |
| SALEGR | -0.226 (0.263) | -0.086 (0.104) | -0.109 (0.208) | -0.092 (0.112) |
| MKTSH | -0.270 (0.762) | 0.233 (0.580) | -1.080 (0.894) | 0.009 (0.534) |
| EMPL | -36.597* (18.760) | -23.715 (15.571) | -16.753 (22.669) | -21.335* (11.674) |
| R&D | 2.131 (2.391) | -3.851 (2.569) | -3.294 (2.854) | 3.199 (2.161) |
| MTB | 0.208** (0.092) | 0.191* (0.099) | 0.257*** (0.086) | 0.255*** (0.085) |
| NUMFIRMS | 0.000 (0.001) | 0.001 (0.001) | 0.001 (0.001) | 0.000 (0.001) |
| INDMFG | -0.946** (0.388) | 0.783* (0.449) | -0.115 (0.382) | -1.066* (0.301) |
| WAGES | -0.895 (0.680) | 1.081* (0.569) | 1.440** (0.609) | 0.901* (0.496) |
| GDPCAP | 0.596*** (0.224) | -0.371** (0.175) | 0.009 (0.181) | 0.127 (0.147) |
| HIGHWAY | 0.071 (0.135) | 0.078 (0.124) | -0.077 (0.159) | 0.083 (0.113) |
| Constant | 0.321 (0.915) | -1.494 (0.947) | -2.506** (1.198) | -1.309 (0.877) |

Table 4, continued

Panel B: Leader and Follower Subsamples

| | Wholly Owned Subsidiaries | | New Plants | | Acquisitions | | Representative Offices | |
|----------|---------------------------|-----------|------------|-----------|--------------|-----------|------------------------|-----------|
| | Leaders | Followers | Leaders | Followers | Leaders | Followers | Leaders | Followers |
| SIZE | -0.294* | -0.243 | -0.247* | -0.149 | -0.302** | 0.347** | -0.138 | 0.059 |
| | (0.164) | (0.159) | (0.148) | (0.115) | (0.146) | (0.170) | (0.151) | (0.120) |
| BUSDUM | -1.831*** | -0.378 | -1.026** | -0.675* | -0.345 | -0.723 | -1.763*** | -0.666* |
| | (0.613) | (0.499) | (0.424) | (0.378) | (0.496) | (0.444) | (0.495) | (0.360) |
| GEODUM | 1.041* | 0.259 | 0.306 | 0.400 | 0.071 | 0.106 | 0.286 | 0.370 |
| | (0.462) | (0.488) | (0.427) | (0.362) | (0.471) | (0.446) | (0.413) | (0.363) |
| DEBT | -0.864 | 0.968 | 0.350 | 0.304 | 4.924*** | -2.577 | -0.800 | -0.322 |
| | (1.792) | (1.127) | (1.684) | (0.848) | (1.380) | (1.659) | (1.542) | (1.079) |
| ADV | -64.610*** | -28.537* | -8.073 | -14.572 | -6.616 | -4.185 | -22.574*** | -16.729** |
| | (22.320) | (12.336) | (5.262) | (9.601) | (4.818) | (9.401) | (8.033) | (8.198) |
| SALEGR | -1.728* | -0.105 | -0.747 | -0.057 | -0.111 | -0.457 | -0.525 | -0.004 |
| | (0.893) | (0.215) | (0.521) | (0.074) | (0.447) | (0.316) | (0.456) | (0.067) |
| MKTSH | 1.129 | -0.050 | 0.615 | 0.438 | -0.410 | -13.145** | 1.744** | -1.073 |
| | (1.214) | (1.169) | (0.810) | (0.799) | (1.136) | (5.877) | (0.828) | (0.862) |
| EMPL | -22.880 | -66.372* | -19.393 | -44.793 | -88.785*** | 36.557 | -33.222 | -24.607 |
| | (26.960) | (37.228) | (25.381) | (30.751) | (34.099) | (28.829) | (25.748) | (22.032) |
| R&D | -1.645 | 0.447 | -13.247* | -3.744 | -5.793 | -7.158 | -8.046* | 3.642 |
| | (4.769) | (3.153) | (7.011) | (3.055) | (5.027) | (4.485) | (4.886) | (2.988) |
| MTB | 0.838* | -0.002 | 0.781*** | -0.005 | 0.689*** | 0.035 | 0.884*** | 0.071 |
| | (0.258) | (0.088) | (0.267) | (0.096) | (0.217) | (0.062) | (0.232) | (0.062) |
| NUMFIRMS | -0.004* | 0.001 | -0.001 | 0.002* | -0.001 | 0.003** | -0.002 | 0.001 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.002) | (0.001) | (0.001) | (0.001) |
| INDMFG | -1.325* | -0.946* | 0.342 | 1.075 | 0.458 | 0.659 | -0.914* | -1.335*** |
| | (0.594) | (0.571) | (0.556) | (0.853) | (0.525) | (0.713) | (0.545) | (0.439) |
| WAGES | -1.700 | 0.560 | 0.199 | 1.882** | 0.522 | 3.708*** | -0.643 | 2.581*** |
| | (1.257) | (1.114) | (0.853) | (0.884) | (0.744) | (1.288) | (0.848) | (0.844) |
| GDPCAP | 0.335 | 0.543* | -0.600** | -0.298 | 0.181 | -0.688* | 0.255 | -0.251 |
| | (0.377) | (0.308) | (0.288) | (0.266) | (0.282) | (0.389) | (0.207) | (0.291) |
| HIGHWAY | 0.438* | -0.210 | 0.361* | -0.133 | -0.157 | 0.091 | 0.292* | 0.007 |
| | (0.210) | (0.195) | (0.188) | (0.187) | (0.275) | (0.232) | (0.176) | (0.166) |
| Constant | 1.436 | -0.015 | 0.017 | -1.895 | -1.141 | -7.399*** | 0.255 | -2.432* |
| | (1.482) | (1.593) | (1.477) | (1.464) | (1.456) | (2.345) | (1.388) | (1.383) |