

**MANAGERIAL SPILLOVERS: HOW FDI FACILITATES CHANGES IN  
MANAGERIAL MINDSETS IN A TRANSITION ECONOMY**

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**Abstract**

Foreign investors upgrade the capabilities of their local labor force through training and experience, which enhances both their abilities and their cognitive horizons. Such trained employees moving to local firms and taking leadership roles provides an important mechanism by which foreign investors facilitate the development of the local industry. We explore the theoretical foundations of this effect, focusing on the managerial orientation, and show empirical evidence for a sample of Chinese pharmaceutical companies: foreign trained executives contribute to executives' market orientation, which in turn enhances its performance.

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## INTRODUCTION

Local firms are believed to benefit from employees trained in foreign investment enterprises (FIE) assume leadership positions. This movement of human capital thus constitutes an important mechanism by which FIE facilitate the development of local businesses and the local economy (Gerschenberg, 1987; Patibandla and Petersen, 2002; Meyer, 2004; Görg and Strobl, 2005; Spencer, 2008). However, the theoretical microfoundations of this ‘managerial spillover’ are not well developed, and few studies have empirically tested such an effect directly.

We explore theoretically and empirically why working for a FIE may equip managers to make a major contribution to local firms they may subsequently lead. Especially in transition economies, corporate executives have pivotal influence on a firm’s adaptation in changing environments (Child, 1972; 1997; Peng, 2003; Dixon, Meyer and Day, 2007). Executives that have previously worked for a FIE will likely contribute broader mental horizons and an international business mindset. In particular, they may upgrade their strategic orientation, and their capabilities, that help local firms to improve their performance. Market orientation, a crucial component of managers’ belief system in a market economy (Hambrick and Mason, 1984; Venkatraman, 1989; Eisenhardt and Bourgeois, 1988), thus is a crucial mediating variable to understanding the channels of impact of foreign investment.

Gaps in managerial cognition are particularly crucial in transition economies where institutions are rebuilt to develop a market economy. A pivotal challenge for local firms in these contexts is to know how to act in a market economy (Swaan 1997, Allmendinger and Hackman 1996, Peng, 2003; Meyer and Peng 2005). Local managers face substantive

cognitive obstacles when trying to lead change processes in a market-based context that is essentially new to them (Newman, 2000). A market-oriented managerial belief system may thus be a scarce capability for local firms in transition economies. To identify such cognitive variations, we distinguish market-driven and internal management orientation of executives' perception of strategic priorities. The relative strength of this managerial orientation drives firms' strategic decisions and their ability to implement them, and thus corporate performance [ADD REFERENCE]. A market-orientation and associated capabilities however can be built through employment with a FIE. This set of capabilities enables these managers to make a crucial contribution to local firms where they subsequently take on leadership roles.

We offer an empirical test based on a sample of executives in the pharmaceutical industry in China, including both the domestic firms and those foreign invested firms. Our statistical analysis based on 156 top executives of 89 Chinese pharmaceutical firms shows that, as predicted, executives' work experience with a FIE enhances a local firm's market orientation, which in turn enhances its performance.

The paper thus contributes by integrating two hitherto very separate lines of literature: FDI spillovers and managerial strategic orientation. We provide a theoretical explanation of an important effect through which FDI spillovers occur, and thus address the lack of solid theoretical micro-foundations in this literature. We contribute to the strategic orientation literature by showing the origins of strategic orientations in and their consequences for organizational performance in a transition economy context.

The remainder of this paper is organized in the following way. We will start by briefly reviewing extant research on spillovers of foreign investment, focusing specifically on the

micro-level effects reflected in managerial cognition of the top executives. We then develop a set of hypotheses, and test them with survey data of top executives in a sample of the largest Chinese pharmaceutical companies. Our regression results provide strong support for our hypotheses. Finally, we conclude by discussing the findings and the implications of this study to management theory and practice.

## LITERATURE

Our theoretical arguments draw primarily on two streams of literature. The literature on FDI spillovers contributes to our understanding of the micro-level effects by which foreign and local firms interact, while the strategic orientations literature explains why mental models may have a pivotal role in this process.

### **Micro Mechanisms of Spillovers of FDI**

FIE are widely believed to create positive spillover effects that enhance local firms' productivity, sales growth and exports. Some empirical studies support the existence of such effects, yet others find contradictory effects. Thus reviews and meta-analyses suggest that spillovers may have positive effects in some contexts, but this finding does not apply universally (Görg and Strobl, 2001; Görg and Greenaway, 2004; Görg and Strobl, 2005; Meyer and Sinani, 2009).

A major obstacle to advancing this line of work is the lack of solid micro-foundations, including the social and cognitive processes by which local and foreign firms interact. This in turn limits our ability to assess *under which circumstances* and *in which contexts* positive

spillover effects are likely to dominate over negative ones (Meyer, 2004; Driffield and Love, 2007). The most common arguments suggest that local firms may benefit from so-called demonstration effects as they observe technologies in use by the foreign investors (Caves, 1972; Perez, 1997; Aitken and Harrison, 1999; Kosova, 2004), or they may benefit from direct vertical linkages with the foreign investment firm (Lall, 1980; Belderbos, Capannelli, and Fukao, 2001; Thompson, 2002; Javorcik, 2004).

Several authors have argued that a major benefit to local firms arises from employee mobility because the capabilities that individuals acquire when working for an FIE add to the capabilities of local firms for whom they work subsequently (Meyer, 2004, Spencer, 2008). However, this claim is rarely supported by empirical evidence, apart from interview or survey based studies (Patibandla and Petersen, 2001, Thompson, 2002). The only systematic study we are aware of is Gerschenberg (1987), who provides evidence of employee movements in Kenya. Other studies focus on the creation of new entrepreneurial firms by individuals trained in the multinational. Markusen and Venebles (1999) offer a theoretical model the relationship between the number of foreign-owned firms and the number of domestic firms arguing that, under certain conditions, entry of foreign investors would trigger entry of new domestic firms in vertically related industries. Görg and Strobl (2001) provide empirical evidence about this effect.

The theoretical basis of these studies, moreover, assumes an increase in the local firms' capabilities as a consequence hiring FIE-trained staff. Only few of the employees of FIE may move on to work for local businesses. Yet, this small number of individuals may have a major impact on the host economy if they proceed to lead major local enterprises (Meyer, 2004).

The literature does not delve into the micro-processes that lead to the increase in the capabilities of local firms. Hence, we lack understanding of what exactly these executives would contribute, and under which conditions these contributions benefit local firms.

### **Strategic Orientation**

The benefits that local firms can attract from interaction with FIE depend on their own motivation and capability to react to competitive threats and opportunities arising from the presence of foreign investors (Meyer and Sinani, 2009). An important factor underlying this motivation and capability is firm's strategic orientation, that is its guiding principles that influencing its behavior (ADD REFERENCE). This strategic orientation often resides in top executive's mental models. The values and beliefs of the upper echelon often shape the direction and outcomes of the whole organization (Hambrick and Mason, 1984). Early research on strategic orientation attempts to develop a holistic construct of strategic orientation, e.g., Venkatraman (1989) proposed a multi-dimensional construct, "Strategic Orientation of Business Enterprises", which he discusses in six dimensions: aggressiveness, analysis, defensiveness, futurity, proactiveness, riskiness. Subsequent research focuses on more specific types of strategic orientation, notably market orientation (Narver and Slater, 1990; Kohli and Jaworski, 1990; Kohli, Jaworski and Kumar, 1993) and entrepreneurship orientation (Lumpkin and Dess, 1996).

Ample research has explored these aspects of strategic orientation, yet comparisons between the different types of strategic orientation began only recently (Atuahene-Gima and Ko, 2001; Noble, Sinha, and Kumar 2002; Zhou et al., 2005). The comparative approach

opens up an exciting and new research direction. It allows us to find answers to new research questions, such as to what extent could the different strategic orientations coexist or do they crowd each other out? If they coexist, what are the relative strength of one strategic orientation versus another, given executives have limited cognitive capacity (Cyert and March, 1963; Ocasio, 1997)? Furthermore, would different strategic orientations have equal impact on firms' ability to benefit from interacting with foreign investors, and from employing individuals trained in foreign investment firms? These questions require further research investigations and are the focus of this study.

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## **HYPOTHESES DEVELOPMENT**

Figure 1 illustrates our analytical framework of this study, which consists of two parts. The first part is to examine the link between executives' work experience in foreign invested companies and the strength of market-driven orientation at individual level. Second, we examine the impact of the relative strength of top executive's market-driven orientation on firm performance. As emphasized in the management literature (Child, 1972; Hambrick and Mason, 1984), firm's strategic choices are made by the top executives who possess most of the decision power, and whose cognition would have profound impact on the direction of firms' strategic actions and organizational outcomes.

### **Executive Working Experience in Foreign Invested Enterprises**

Knowledge is a fluid mix of framed experiences, values, contextual information, and expert insights that provide a framework for evaluating and incorporating new experiences and information (Davenport and Prusak, 1998). Within organizations, personal knowledge is the main building block of more macro-level knowledge. Personal knowledge consists not only of explicit knowledge but also of tacit knowledge (Polanyi, 1962). This tacit nature arises from what Nonaka (1994) called “knowledge of experience”, i.e. knowledge that has evolved with the specific individual’s education and experiences. Organizational knowledge integrates such specific personal knowledge, and thus is also coevolving with the career development paths of the individuals forming the organization.

We focus on executive work experience in foreign invested enterprises that may be transferred via executive mobility. While previous studies mainly considered the role of engineers and R&D staff (Kim and Marschke, 2005; Oettl and Agrawal, 2008), executives are responsible for the overall strategy, behavior and performance of firms. When an executive moves from one company to another, his/her knowledge accumulated from the previous career experience affects his/her values and beliefs and thus his/her perception of the industry (Spender, 1989), and the ways of doing business, including the perception of strategic priorities for firms to achieve organizational objectives (Prahalad and Bettis, 1986).

Two types of strategic orientations are considered particularly relevant to executives’ perception of strategic priorities, namely those related with keeping pace with external market and actively engaging in competition (e.g. brand building, product portfolio adjustment etc.), and those related with internal administration (e.g. human resource management and inter-unit coordination) (Bourgeois, 1980; Eisenhardt and Bourgeois, 1988; Bowman and Ambrosini,

1997). The two strategic orientations have been labeled “market-driven orientation”<sup>1</sup> and “internal-management orientation”. They are not two ends on one spectrum, but rather, two dimensions in top executive’s perception of strategic priorities (Wright, Kroll, Pray and Lado, 1995). The two-dimensionality is reflected in the fact that a decrease in the strength of one strategic orientation does not necessarily mean an increase in the strength of another. Moreover, some managers could perceive both unimportant, relying instead on their existing competencies, or simply “muddling through”, while others could perceive both as very important, reflecting a dual focus (Wright et al., 1995). While both strategic dimensions compete for top executive’s attentions, among other things, the relative importance of them as revealed in top executive’s assessment of firm’s strategic priorities often indicates which dimension would received more attention from the top executives. This is also likely to lead to more favorable resource allocation and organization support on the preferred dimension. Hence, our study does not investigate the market-driven orientation and internal management orientation separately, but examines their relative strength.

The notion of “market-driven orientation” is particularly relevant as an indicator for managerial spillover effect of inward FDI on firms in transition economies undergoing a process of institutional change. For instance, local firms in China experienced market liberalization processes since 1978, and thus have seen major changes in their institutional environment. Foreign invested enterprises, including joint ventures or wholly owned subsidiaries of the MNCs subsidiaries, not only created many job opportunities for local

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<sup>1</sup> We used the notion of “market-driven orientation” to avoid possible confusion with the measurement scale of market orientation (Narver and Slater, 1990; Kohli, Jaworski and Kumar, 1993). The difference is that the “market-driven orientation” includes both reactive actions to meet existing customers’ needs and proactive actions as long as they are related with firm’s efforts directed to the external market.

Chinese, but also introduced new business models. They usually position themselves in the higher-end market segment, i.e. producing and selling products with higher technology content developed by the foreign investors. Hence, the FIEs often do not have cost advantage, but critically depends on marketing to compete with local firms offering cheap and often reasonably effective products. Hence, executives with working experience in the FIEs usually are more aware of the importance and the capabilities that are required to win in a competitive market. This leads to our first hypothesis.

**Hypothesis 1a.** Executive's working experience in FIEs is positive associated with the relative strength of market-driven strategic orientation.

Among top executives, the CEO occupies a special position. He or she not only needs to attend to internal management issues of the firm, but also assumes a unique role as the representative of the firm. Thus, a CEO typically has to interact with important external stakeholders, including government officials, executives of financial institutions and peer companies, and leading customers, to secure the resources that are needed for firm survival and growth.

For firms in transition economies, market liberalization means that they have to win in market place. The increased level of firm's external dependence directly creates pressure on CEOs, who are accountable for their firm's performance. Hence, we expect that the positive impact of FIE work experience on market-driven orientation would be stronger for CEOs.

**Hypothesis 1b.** The positive relationship between their work experience in FIEs and the relative strength of market-driven strategic orientation is stronger among CEOs than among other executives.

### **The Relative Strength of Strategic Orientations and Firm Performance**

Both market-related and internal aspects of management may be important for firms to achieve better performance. Yet, top executives face the constraint of limited time, energy and cognitive capacity, which limits the attention they can give each strategic issue (Ocasio, 1997). As a result, what matters is not only whether an issue is important or not, but also the relative importance of the issue when compared with others. Hence, issues that are perceived to be more important are likely to receive more organizational support and have more impact.

Which strategic orientation would most enhance performance often depends on the specific context, including environmental conditions and the goals of the firm. In emerging economies, attention to market-related aspects, including building strong brand and company reputation, adjusting product portfolio, improving market share of key products, and monitoring market growth opportunities, is particularly important to achieve profitability (REFERENCE REQUIRED). This is for two reasons. First, technology and regulatory policies have been changing rapidly. Keeping pace with the changing environment is pivotal for firms to survive and to gain competitive advantages. With regard to technology, innovative ideas often come from market demand and their success is often determined by market acceptance (Von Hippel, 1988). With regard to regulation, business opportunities (e.g. separation of OTC drugs from prescription drugs in the pharmaceutical industry) emerge with

regulatory change. Hence firms that monitor market trends closely are often better prepared to seize opportunities.

Second, when there are a larger number of competitors, price margins become slimmer. Firms that could adjust their product portfolio in response to market demand and competition dynamics could often steer them away from the niches with excessive number of competitors and slimmed margin (Dawar and Chattopadhyay, 2002; Meyer and Tran, 2006). Moreover, investment in brands and in sales and marketing may also allow firms to reach larger customer bases and thus achieve economies of scale, which is critical for low-end competitors. Such a market focus can thus be effective means to achieve better firm performance, yet only if they are treated as strategic priorities by top executives, and receive substantial support including monetary investment and personnel allocation.

**Hypothesis 2a.** Firms with executives that display a stronger market-driven strategic orientation are performing better.

Although each top executive would have certain influence on the formation and implementation of firm strategy, particularly in the functional area that they are in charge of, CEOs usually have the final call and have more influential power. Hence we also expect that those firms whose CEOs have stronger market-driven orientation would be related with better performance.

**Hypothesis 2b.** Firms with CEO that displays a stronger market-driven strategic orientation

are performing better.

## METHODOLOGY

### Sample and Data

We test our hypotheses in the setting of the Chinese pharmaceutical industry. Since the late 1970s, the industry has experienced substantial changes, notably ownership reform and market liberalization. Ownership reform has given managers more decision autonomy, and thus a pivotal role in shaping firm strategy and performance. Market liberalization has attracted entry by foreign investors. Since the mid-1980s, most of the major players in the world pharmaceutical industry, including Pfizer, Merck, Glaxo Wellcome, Eli Lilly, Astra Zeneca, and Bristol Meyers Squibb, have set up subsidiaries in China. Local manufacturers accounted for 43% of the market share in 1999, joint ventures accounted for 30%, and imported drugs accounted for the remaining 27% (IMS China Update, 2000).

We piloted our survey with executives of 11 pharmaceutical firms in Beijing. Based on the feedback and suggestions received, we revised the format of the questionnaire. Some items were deleted or modified, while others were added. Following pilot, a sample of the 800 largest pharmaceutical manufacturing firms based on 2003 annual sales revenue, as listed in the *2003 Statistical Yearbook of Chinese Pharmaceutical Industry* (a publication by the *Chinese Pharmaceutical Industrial Association*) was constructed as the sampling frame. We conducted two waves of mail questionnaire surveys in winter and spring 2004/5. After contacting each firm via telephone to confirm their initial willingness of participation, we

mailed out the questionnaire packages to 403 firms in the first wave survey, and adding another 223 firms in the second wave. Hence the total number of firms to which we mailed questionnaire packages was 626. Each package contained a cover letter, three questionnaires and three self-addressed pre-paid envelopes. The cover letter was endorsed by the *Chinese Pharmaceutical Industrial Association* and a very prestigious research university in China. Each letter was addressed to the name of the CEO or President of the respective company. The front page of each questionnaire explained the research objectives and provided a definition of top management team (TMT) as “a group of top executives in the firm that regularly participate in important decision-making, which would have substantial influences on the firm”. The opening paragraph also stated the confidentiality of data provided by each respondent and opportunity for the respondent to receive a feedback report after data were collected and analyzed. After sending out the questionnaire packages, we followed up by three reminders via telephone 7, 14 and 21 working days after, as suggested by Dillman (2000). Firms that indicated that they had not yet received the package, received the questionnaires by FAX. Moreover, we sent electronic version of the questionnaire to about 15 firms that asked for it. To reduce measurement error, we checked consistency among team members on their responses to those fact-based items (e.g. firm age, year in which the current CEO took position etc.), and also compared their reported 2003 sales revenue of the firm with archival data immediately after we received returned questionnaires. In cases when further correction or clarification is needed, we called the respondents to check the relevant part of information. This procedure not only allowed us to correct some errors, but also gave us a chance to directly interact with the executives and check if the mail survey was filled out by

himself or herself.

Altogether, we obtained 192 responses from 97 firms. Missing data or inadequate qualification as TMT member reduced the final sample to 156 valid responses from 89 firms. These responses included 50 respondents of 32 firms from the first wave and 106 respondents of 57 firms from the second wave. The effective response rate was 14.2% (89/626), which is similar to the typical response rate of 10% to 12% for mail surveys to senior executives as reported in Hambrick, Geletkanycz and Fredrickson (1993: p.407). The 89 firms in the final sample were located in 26 (out of the 31) administrative provinces/regions in mainland China. Their average sales revenue was approximately 66.7 million US dollars. While a common concern about research on TMTs is about using single respondent per firm, we managed to collect multiple responses from about half of the firms. Of 89 firms in the final sample, 49 firms had single respondents, 13 had two respondents, and 27 had three respondents.

We tested for non-response bias and for significant differences between the respondents in the two waves of the survey. The proportional breakdown of the 89 firms by province and ownership type, were not significantly different from those of the initial 800 firms. We also compared the means of three firm characteristics (firm age, number of employees in 2003 and annual sales revenue in 2003) between the respondent firms from the two waves. Results of the Wilcoxon rank sum W-test show that there are no significant differences on these characteristics between the respondents of the two waves.

In addition to the questionnaire survey data, we collected archival data to measure firm performance and registered ownership type. For firm performance, we collected monthly data of sales and profits for the 89 firms during July 2004 to June 2005, and their annual sales and

profits data in 2003. The data was made available by *TianShiMei Co.*, which is an information service firm specialized in pharmaceutical industry, and is affiliated with the *State Food and Drug Administration*. Registered ownership type of each firm in 2003 was obtained from the *2003 Statistical Yearbook of Chinese Pharmaceutical Industry* published by the former *State Economic and Trade Council*.

### **Dependent Variable**

**Firm profitability.** Firm performance was measured by the ROS of each firm during July 2004 to June 2005, i.e. the aggregated monthly profits divided by the aggregated monthly sales of each firm over the 12 months period. It reflects the profitability of the firm. The ROS measure is consistent with questionnaire respondents' assessment of the perceived strategic priorities of different strategic aspects as means to achieve firm profitability.

### **Explanatory Variables**

The main explanatory variable of this study is the relative strength of executives' market-driven orientation in their perception of the strategic priorities for their firms. It is derived by comparing the absolute strength of executive's market-driven orientation with that of internal-management orientation. The two strategic orientations were identified based on executive's rating of the perceived strategic importance of ten areas for their firms to achieve sustainable profitability. The ten areas (please refer to the appendix) were adapted from previous studies (Bourgeois, 1980; Eisenhardt and Bourgeois, 1988) on the policy areas top executives often engage in. Changes to the items were made to accommodate the feedback from the top executives received during the pilot test. Of the ten policy items, five items reflected executive's market-driven orientation, three items reflected the internal-management

orientation, and two items were dropped from the analysis of the strategic orientations because their ambiguous relationship with the above two factors.

**Absolute strength of executive's market-driven orientation.** It was measured by the average of the rating scores on the following 5 items, in terms of their perceived importance to achieve sustainable firm profitability (7=very important, 1=not important): (1) adjust product portfolio, and prioritise resources allocation to improve the market shares for main products; (2) monitor the trend of market growth to capture growth opportunities; (3) increase R&D investment and launch new products or services to the market; (4) build solid product brand and company reputation; (5) increase marketing investment to enhance distribution channels and sales forces. Cronbach's alpha of the five items was 0.858.

**Absolute strength of executive's internal-management orientation.** It was measured by the average of the rating scores on the following 3 items, regarding their perceived importance to achieve sustainable firm profitability (7=very important, 1=not important): (1) recruit and keep key personnel, as well as improve the skill of the workforce; (2) establish reasonable pay and reward system to keep employees motivated; (3) strengthen coordination across different subunits of the company, and increase organizational cohesiveness. Cronbach's alpha of the three items was 0.850.

**Relative strength of executive's market-driven orientation.** It was measured by the arithmetic difference between the absolute strength of executive's market-driven orientation and the absolute strength of their internal-management orientation, i.e. the relative strength of market-driven orientation equals the absolute strength of market-driven orientation minus the absolute strength of internal-management orientation.

**FIE working experience.** It is a dummy variable, which was coded as 1 when the respondent met either one of the following two conditions: (a) he/she currently works in a foreign invested enterprise (FIE); (2) he/she reported prior working experience in a foreign invested enterprise. Foreign invested enterprises include both international joint ventures and wholly owned subsidiaries of foreign companies.

**CEO dummy.** It is coded as 1 when the executive holds the current CEO position by the time of our survey, and 0 for other executives.

### **Control Variables**

For testing the antecedents of the relative strength of executive's market-driven orientation, we first controlled for the absolute level of their internal-management orientation. We also included those variables that are related with executive's personal background, i.e. age, gender (with 1=male, 0=female), number of years since he/she took the current executive position, education level (coded based on the reported final degree of the executives, with 0=higher school graduate or equivalent; 1=college graduate; 2=university undergraduate degree; and 3=master's degree or above), industry tenure (measured by the working experience of each executive in number of years in the pharmaceutical industry), and a dummy variable for those executives whose primary functional background is in marketing/sales (1= the executive reported longest working experience in the functional area of marketing/sales among the ten listed functional areas, and 0=otherwise)

We included several firm level control variables, including (1) firm size, which was measured by the reported employee number of the firm in 2003, (2) firm age, measured by the number of years since the reported founding year of the firm to the end of 2004; (3) past firm

performance, which is the ROS of the firm in 2003; and (4) registered ownership type of the firm in 2003, which has five broad categories based on the classification of the *State Administrative Bureau of Industry and Commerce*, including state and collectively owned enterprises, foreign invested companies, privately owned enterprises, share holding companies and all else. Similar set of controls variables, including executive's personal characteristics and firm characteristics, are also used in testing the performance impact of executive's strategic orientation.

### **Analytical Procedure and Model Specification**

We use Ordinary Least Squares (OLS) linear regression with heteroscedasticity robust standard errors to test the hypotheses. To test the effect of executive's knowledge background on the relative strength of their market-driven strategic orientation, we first entered all the control variables into the baseline model (model 1). We then entered the dummy variable for FIE working experience in model 2 to test H1a. In model 3, we add CEO dummy and the interaction term between FIE working experience and CEO dummy to test H1b.

To test the performance impact of executive's strategic orientation, we used firm ROS during July 2004 to June 2005 as the dependent variable. Models 4-9 use the full sample of 156 executives, of which 3 have missing values on performance, hence N=153. Model 4 is the baseline model with control variables only. The absolute strength of internal-management orientation was entered in model 5, the absolute strength of market-driven orientation entered in model 6. And both were entered simultaneously entered in model 7. Hence, models 4-7 test the separate effect of the two types of strategic orientation, i.e., market-driven orientation and internal-management orientation, on firm performance. Model 8 controls for internal

management orientation, and tests for the effect of the relative strength of executive's market-driven orientation, as hypothesized in H2a. Model 9 further tests H2b by adding the CEO dummy and its interaction term with the relative market-driven orientation.

Five variables that were entered into the regression models were transformed by the natural logarithm of their corresponding raw form: executive's age, their industry tenure, tenure in current executive position, firm age, and firm size. The logarithmic transformation was used to normalize these variables that might have skewed distribution (Wooldridge, 2003: p.188). All regression models based on the full sample (i.e., models 1-6) use clustering on executive's firm affiliation to control for possible non-independence among executives belonging to the same firm. Besides, the Variance Inflation Factors (VIFs) were computed for each independent variable after running the regression models to detect if multicollinearity was of concern. These VIF values were well below the common cut-off threshold of 10 (Cohen, Cohen, West and Aiken, 2003: p.425), the highest VIF value being 2.60.

## **RESULTS**

Table 1 reports the descriptive statistics of the variables, including means, standard deviations, and correlation coefficients. Although the sample mean of the absolute strength of market-driven and internal-management orientations are close, for each executive, the relative strength of executive's market-driven orientation ranges between -2.93 to + 2.87. Of the 156 top executives, fifty-five indicated stronger market-driven orientation, fifty-four indicated stronger internal-management orientation, and the remaining forty-seven reported equally strong on the two strategic orientations. The average age of the 156 executives was 40, and

about 76.3% of them are male. Moreover, 82 executives reported bachelor's degree as their final degrees, 33 executives each with postgraduate degrees (including MBA, other master's degree and doctoral degree) and college graduates, the remaining eight were higher school graduates or equivalent. Hence, the mean education degree is close to university undergraduate degree. On average, the top executives also reported about 14-year industry tenure in the pharmaceutical industry. 27% (i.e. 42 out of the 156 executives) reported primary functional background in marketing and/or sales. And 28% (i.e. 43 out of the 156 executives) were either currently working in a FIE or had worked in FIEs in the past. The average profitability was 0.096, with a range from -0.331 to + 0.391. The correlation matrix shows that the absolute strength of market-driven orientation and the absolute strength of the internal-management orientation are positively correlated ( $r=0.748$ ,  $p<0.001$ ), suggesting that when a respondent's rating on one strategic orientation increases, his/her rating on the other is also likely to increase. The positive and significant correlation coefficient also indicates that those respondents who rated high on market-driven orientation also rated high on the internal-management orientation. The consistency between the ratings of the two types of strategic orientation further means that those rated lower on the absolute strength of market-driven orientation did not necessarily have weaker relative strength of market-driven orientation, because their ratings on the internal-management orientation was also likely to be lower. Hence the relative strength between the two tells us additional information about executive's relative preference between the two strategic orientations. When the relative strength is positive, executives exhibit stronger market-driven orientation versus the internal-management orientation. And when it equals zero, the two types of strategic

orientation are equally strong.

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Table 2 presents the results of regression analysis for the effect of executives' work experience on the relative strength of their market-driven orientation. Model 1 is the baseline model, model 2 tests hypothesis 1a, which states that executives with working experiences in FIEs will display stronger market-driven orientation versus the internal-management orientation. Model 3 tests H1b, which further predicts that the positive effect will be stronger for CEOs. As shown in Table 2, the coefficient of the FIE working experience dummy are positive and significant both in model 2 and model 3 ( $p < 0.05$ ). So H1a was strongly supported. However, in model 3, we found that, while the coefficient for the main effect of the CEO dummy is positive and significant ( $p < 0.05$ ), the coefficient for the interaction term between the CEO dummy and FIE working experience was positive but not significant. Hence, H1b was only partly supported.

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Table 3 reports the results of regression analysis for the effect of executive's strategic orientation on firm performance. Hypothesis 2a states that executives with stronger market-driven orientation versus internal-management orientation are positively associated with better firm performance. As shown in model 8 and 9, the coefficient of the relative

strength of executive’s market-driven orientation is positive and significant ( $p < 0.05$ ). Hence H2a is supported. Acknowledging that CEOs usually have more influences on firm strategy and performance than other executives, Hypothesis 2b states that for CEOs, the positive impact of the relative strength of market-driven orientation on firm performance will be stronger. As shown in model 9, the coefficient of the interaction term between the relative strength of market-driven orientation and the CEO dummy is positive and highly significant ( $p < 0.01$ ). Hence H2b is strongly supported.

Because the relative strength of market-driven orientation is based on the difference between the absolute strength of market-driven orientation and internal-management orientation, it is also of interest to analyze the effect of each of the two types of strategic orientation on firm performance separately. As reported in Table 3, models 5-7 further show that while the absolute strength of executive’s market-driven orientation was positively and significantly associated with firm performance ( $p < 0.05$  in model 6 and  $p < 0.10$  in model 7), the effect of the absolute strength of their internal-management orientation was not significant (models 5 and 7).

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Some earlier studies found that when facing different choices, firms with dual focus (Wright etc. 1995) or ambidexterity (He and Wong, 2004) outperformed other types of firms. Therefore, we also entered the absolute value of the difference between market-driven orientation and internal-management orientation as the explanatory variable and tested for its

effect on firm profitability. If the ambidexterity hypothesis is to be supported, the coefficient of the absolute difference between the two strategic orientations should be negative. Because it would then support the expectation that when firms are balanced on the two strategic orientations (correspondingly the difference should be zero), firm profitability would be higher than the cases when the executives of the firms exhibited stronger strategic orientation in any one of the two strategic orientations (which would correspond to the absolute value of the difference larger than zero). However, the coefficient based on the analysis of our sample was not significant<sup>2</sup>, hence the ambidexterity hypothesis was not supported in this sample.

## **DISCUSSION AND CONCLUSION**

We have examined how experience working for an FIE shapes top executive's strategic orientation, and thus the performance of the local firms that they lead. Our main empirical finding based on a questionnaire survey based on 156 top executives in 89 Chinese pharmaceutical firms supports the propositions that FIE experience enhances market-orientation, which in turn helps their firms to attain higher profitability (measured by ROS). Adopting a knowledge-based view of firms (Kogut and Zander, 1992; Grant, 1996), we further investigated the link between executive's working experience and the relative strength of their market-driven orientation. Results show that executive's working experience in FIEs has positive influence on the relative strength between the two types of strategic orientation. That is, those executives with working experience in foreign invested enterprises display stronger market-driven orientation than internal management orientation.

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<sup>2</sup> Detailed results are available from the authors upon request.

## **Implications to Theory and Public Policy**

We proposed that a crucial channel for foreign investment to influence local firms is via the migration of trained managerial staff from FIE to leadership positions in local firms. This channel had variously been suggested in the literature (Gerschenberg, 1987; Meyer, 2004; Spencer, 2008), yet its micro-foundations had not yet been analyzed theoretically or empirically. We propose that a crucial aspect of this effect is influence of experience working for an FIE on future executive's cognition of their business environment, and thus the strategic orientation they adopt in leadership roles in local firms. We have tested this argument with two propositions linking respectively FIE work experience to market orientation, and market orientation to firm performance. Both have been supported in our empirical analysis.

Beyond its contribution to theory, this finding has practical implications for policy makers assessing the likely effect of inward foreign investments. More specifically, it provides support to the positive impact of foreign investment in emerging markets. Previous studies already found support for the positive effect especially in transition economies (Görg and Strobl, 2001; Buckley, Clegg and Wang, 2002; Meyer, 2004). It is also widely accepted that foreign direct investment brings capital and technology, both of which are bottlenecks for economic growth in emerging markets. However, most studies adopted the approach of productivity analysis, which directly examined the presence of FIE on local firms' productivity (Kosova, 2004; Wei and Liu, 2006; Tian, 2007; Chang and Xu, 2008). This study adds an important complementary effect by showing the positive impact of FIE via human resource development, i.e. managers with working experience in FIEs developed stronger market-driven orientation, which is associated with beneficial firm performance.

This study also yields new insights for the strategic management literature. The comparative approach to strategic orientation reflects the logic of an attention-based view of strategy (Ocasio, 1997), i.e. different strategic issues compete for top executive's attention and those perceived to be relatively more important are more likely to have more substantial impact on firm behavioral and performance. Adopting a comparative approach in studying manager's strategic orientations in their perception of strategic priorities, this study also allows us to understand the cognitive basis of how strategic choices (Child, 1972; 1997; Peng, 2003) are made in a radically changing environment.

Putting the strategic orientations into context, i.e. the empirical setting of this study - Chinese pharmaceutical industry, which has been undergoing dramatic transition from central planning economy to market economy, the market-driven strategic aspects are relatively new to the executives in the field, hence, in a way, the relative strength of market-driven orientation serves as an indicator of managerial leaning regarding how to compete in a market economy mode. In extant strategic management literature, learning is often studied at firm level and studied with a behavioral research approach. This study examines strategic orientation based on top executive's perception of strategic priorities. Hence it tries to shed light on the cognitive mechanism of learning at individual level, which is an equally important aspect of organizational learning (Argote, 1999).

### **Limitations and Extensions**

This study also has limitations in several aspects. Future research in these aspects would deepen our understanding of the formation and consequences of manager's strategic orientations. The first limitation is that the analysis is based on one industry in one country

only. Hence the generalizability of the finding is subject to tests in future studies. Our finding that the relative strength of top executive's market-driven orientation versus internal-management orientation is positively related with firm profitability, might also be specific to the transition context. In other words, it is possible that in other contexts (e.g. other countries or the same country in other development stages), relatively stronger internal-management over market-driven orientation might be more preferable, or ambidexterity on both strategic orientations is found to be leading to success. Again, although the finding might be sensitive to the context, the comparative approach of studying managers' strategic orientation adopted in this study is applicable to studies in other settings.

In interpreting the results, caution is also needed that a positive relationship between the relative strength of market-orientation and firm profitability does not mean market-driven orientation is good and internal-management orientation is bad. As shown in models 5-7 in Table 3, it only suggests that market-orientation was significantly and positively related with firm profitability, whereas internal-management orientation was not. To further assess the performance impact of the strategic orientations, future study could try to use different measures of performance to test if top executive's internal management orientation matters. One possibility is to use lagged firm profitability over several years to see if it takes longer for internal management orientation to take effect. Another is to use different performance indicators, such as firm growth and employee satisfaction, to test the effect of the internal management orientation.

Conceptually, our study focused on a specific type of managerial spillover, namely the contribution of individuals trained in FIEs that subsequently assume leadership roles in role

firms. However, this effect is likely to be complemented by movements of rank-and-file employees in critical functions such as marketing and finance, and by individuals leaving an FIE to set up their own entrepreneurial businesses. Future research may explore these various types of contributions individuals trained in FIEs make in the host economy. Moreover, if such contributions are important, it would also be important to further investigate the determinants of mobility of employees between foreign and locally owned firms.

### **Conclusions**

To sum up, this study shows that in the setting of a transitional economy, i.e. the Chinese pharmaceutical industry, when top executives, particularly CEOs, have experience in FIEs, they develop stronger market-driven orientation (relative to internal-management orientation), which in turn helps their firms to perform better. Hence, our study provides direct and micro-level evidence on the managerial spillovers from FDI in emerging markets.

More generally, our study opens the black box of firms, which are the usual unit of analysis for spillover studies. By focusing on managers in pivotal roles, we illustrate the importance of individuals in the process of realizing spillovers from foreign investors.

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## APPENDIX

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To what extent do you think the following areas, if employed by your firm, would have important impact on your firm to achieve sustainable profitability:

(7=very important, 1=not important)

***(Market-driven orientation) (Cronbach's alpha=0.858)***

- (1) adjusting product portfolio and prioritising resources allocation to improve the market shares for our main products;
- (2) monitoring the trend of market growth to capture growth opportunities;
- (3) increasing R&D investment and launching new products or services to the market;
- (4) building solid product brand and company reputation;
- (5) increasing marketing investment, and enhancing distribution channels and sales forces.

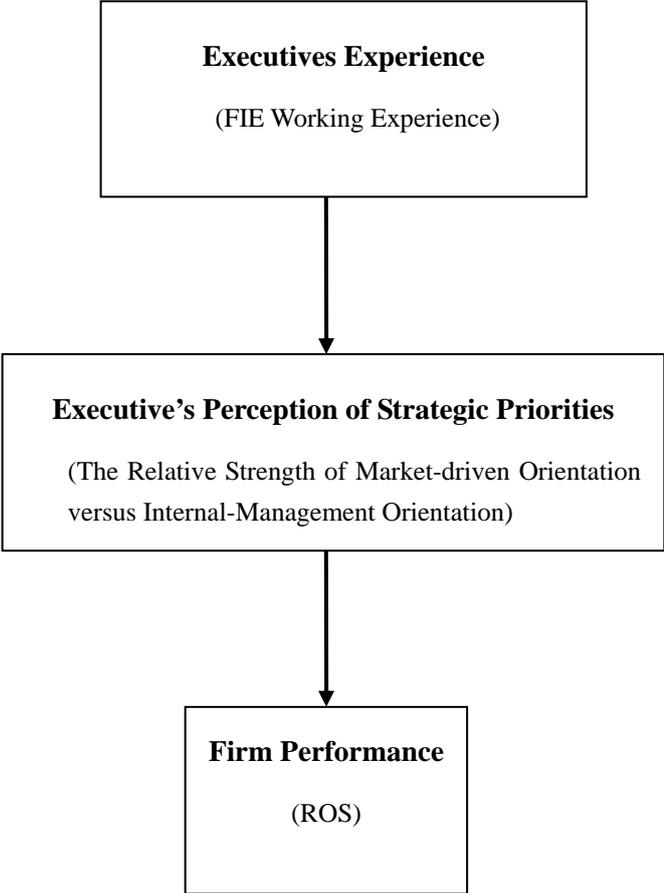
***(Internal-management orientation) (Cronbach's alpha=0.850)***

- (1) recruiting and keeping key personnel, as well as improving the skill of the workforce;
- (2) establishing reasonable pay and reward system so that employees are motivated;
- (3) strengthening the coordination across different subunits of the company to increase organizational cohesiveness;

***(Unused items)***

- (1) improving procurement, production and inventory management to seek for cost advantage;
  - (2) using capital market as a tool to integrate the external resources, and achieving expansion.
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**Figure 1 Research Framework**



**Table 1 Mean, Standard Deviation and Correlation Matrix of Variables (Full Sample)**

Variables	Mean	S.D.	Min	Max	1	2	3	4	5
1. Firm Performance (ROS_04to05)	0.096	0.112	-0.331	0.391	1.000				
2. Relative Strength of Market-Driven Orientation	0.042	0.607	-2.933	2.867	0.174*	1.000			
3. Strength of Market-Driven Orientation	6.283	0.839	2.400	7.000	0.220**	0.312***	1.000		
4. Strength of Internal-Management Orientation	6.241	0.868	3.000	7.000	0.092	-.397***	0.748***	1.000	
5. IJV Working Experience	0.276	0.448	0	1	0.020	0.112	-0.017	-0.095	1.000
6. CEO Dummy	0.179	0.385	0	1	0.057	0.050	0.038	0.002	-0.102
7. Education Degree Level	1.897	0.788	0	3	0.004	0.001	0.045	0.043	0.172*
8. Industry Tenure	13.846	7.977	1.000	35.000	0.043	-0.079	0.063	0.116	0.022
9. Primary Functional Background in Marketing/Sales	0.269	0.445	0	1	0.029	0.186*	0.071	-0.062	0.111
10. Executive's Age	40.335	8.157	26.000	64.000	-0.001	-0.110	-0.052	0.027	0.104
11. Executive's Gender	0.763	0.427	0	1	-.0004	0.135†	-0.059	-0.151†	-0.095
12. Tenure in Current Executive Position	4.230	4.264	0.250	21.333	0.037	0.021	-0.111	-0.122	0.149†
13. Firm Age	16.295	15.840	1.000	85.000	0.081	0.056	-0.042	-0.080	0.163*
14. Firm Size	2423.6	4944.5	31	20100	-0.019	0.076	0.176*	0.117	-0.112
15. Past Firm Performance (ROS_03)	0.117	0.130	-0.453	0.467	0.423***	-0.006	0.018	0.021	0.100

Variables	6	7	8	9	10	11	12	13	14	15
6. CEO Dummy	1.000									
7. Education Degree Level	0.104	1.000								
8. Industrial Tenure	0.242**	0.011	1.000							
9. Primary Functional Background in Marketing/Sales	-0.058	0.061	0.032	1.000						
10. Executive's Age	0.307***	-0.018	.718***	-0.010	1.000					
11. Executive's Gender	0.222**	0.177*	0.051	0.033	0.037	1.000				
12. Tenure in Current Executive Position	0.200*	-.262**	.379***	0.077	.399***	0.018	1.000			
13. Firm Age	-0.122	0.045	0.069	0.060	-0.010	0.070	0.089	1.000		
14. Firm Size	-0.086	.281***	0.138†	-0.042	0.038	0.121	-0.134†	0.123	1.000	
15. Past Firm Performance (ROS_03)	-0.037	0.080	-0.050	0.045	-0.068	-0.040	0.124	0.074	0.090	1.000

Except for ROS\_04to05 N=153, for all other variables N=156. Two-tailed significant tests, † p< .10 \* p< .05 \*\* p<.01 \*\*\* p<.001;

Education degree level is a categorical variable.

Industrial tenure, executive age, tenure in executive position, firm age and firm size were reported in the raw data form, i.e. before logarithm transformation.

**Table 2 Results of OLS Regressions on the Relationship between the FIE working Experiences and the Relative Strength of Executive's Market-Driven Orientation (N=156)**

	Model 1	Model 2	Model 3
<b>Tests of Hypotheses</b>			
IJV Working Experience (H1a)		0.2512*	0.3034*
CEO Dummy			0.2872*
CEO Dummy X IJV Working Experience (H1b)			0.0931
<b>Control Variables</b>			
Strength of Internal-Management Orientation	- 0.2490**	-0.2299**	- 0.2273**
Education Degree Level	-0.0572	-0.088	-0.1183*
Industry Tenure	-0.0055	0.0003	-0.0099
Primary Functional Background in Marketing/Sales	0.2189†	0.2134†	0.2376*
Executive Age	-0.1328	-0.1845	-0.3360
Executive Gender	0.1096	0.1321	0.0796
Tenure in the Current Executive Position	-0.0349	-0.0328	-0.0526
Firm Age	0.5060	0.0301	0.0491
Firm Size	0.0838*	0.0875*	0.0952*
Past Firm Performance (ROS03)	-0.0473	-0.0817	-0.1161
Firm Ownership Dummies	yes	yes	yes
Clustering on Firm IDs	yes	yes	yes
<b>Intercept</b>	<b>1.3976</b>	<b>1.3983</b>	<b>1.8767*</b>
<b>R<sup>2</sup></b>	<b>0.2633</b>	<b>0.2838</b>	<b>0.3111</b>
<b>Adjusted R<sup>2</sup></b>	<b>0.1959</b>	<b>0.2127</b>	<b>0.2318</b>
<b>F</b>	<b>2.88**</b>	<b>2.88**</b>	<b>3.78***</b>

(1) Unstandardized coefficients reported;

(2) Two-tailed significant tests, † p< .10 \* p< .05 \*\* p<.01 \*\*\* p<.001 ;

(3) Value of VIFs in all the models are less than 1.95;

(4) Industrial tenure, executive age, tenure in executive position, firm age and firm size were transformed by the natural logarithm of the corresponding raw data.

**Table 3 Results of OLS Regressions on the Performance Impact of the Relative Strength of Executive’s Market-Driven Orientation (N=153)**

	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
<b>Tests of Hypotheses</b>						
Relative Strength of Market-Driven Orientation (H2a)					<b>0.0461*</b>	<b>0.0397*</b>
CEO Dummy						<b>0.0184</b>
CEO Dummy X Relative Strength of Market –Driven Orientation (H2b)						<b>0.1254**</b>
<b>Control Variables</b>						
Strength of Market-Driven Orientation			<b>0.0292†</b>	<b>0.0461*</b>		
Strength of Internal-Management Orientation		<b>0.0121</b>		<b>- 0.0221</b>	<b>0.0239</b>	<b>0.0236</b>
Executive Age	<b>0.0212</b>	<b>0.0187</b>	<b>0.0217</b>	<b>0.0247</b>	<b>0.0247</b>	<b>0.0109</b>
Tenure in Current Executive Position	<b>-0.0024</b>	<b>-0.0010</b>	<b>0.0008</b>	<b>0.0002</b>	<b>0.0002</b>	<b>- 0.0011</b>
Firm Age	<b>0.0090</b>	<b>0.0112</b>	<b>0.0108</b>	<b>0.0079</b>	<b>0.0079</b>	<b>0.0091</b>
Firm Size	<b>0.0039</b>	<b>0.0030</b>	<b>0.0002</b>	<b>- 0.0003</b>	<b>-0.0003</b>	<b>.00004</b>
Past Firm Performance (ROS_03)	<b>0.3779**</b>	<b>0.3754**</b>		<b>0.3766**</b>	<b>0.3777**</b>	<b>0.3797***</b>
Firm Ownership Dummies	yes	yes	<b>0.3741***</b>	yes	yes	yes
Clustering on Firm IDs	yes	yes	yes	yes	yes	yes
			yes			
<b>Intercept</b>	<b>- 0.0830</b>	<b>-0.1582</b>	<b>-0.2580</b>	<b>-0.2218</b>	<b>-0.2218</b>	<b>-0.1778</b>
<b>R<sup>2</sup></b>	<b>0.2071</b>	<b>0.2150</b>	<b>0.2520</b>	<b>0.2635</b>	<b>0.2635</b>	<b>0.3104</b>
<b>Adjusted R<sup>2</sup></b>	<b>0.1572</b>	<b>0.1597</b>	<b>0.1993</b>	<b>0.2060</b>	<b>0.2060</b>	<b>0.2459</b>
<b>F</b>	<b>3.12**</b>	<b>2.86**</b>	<b>3.13**</b>	<b>3.05**</b>	<b>3.05**</b>	<b>3.90***</b>

- (1) Unstandardized coefficients reported;
- (2) Two-tailed significant tests, † p< .10 \* p< .05 \*\* p<.01 \*\*\* p<.001
- (3) Values of VIFs in models 4-9 are less than 2.6.
- (4) Executive age, tenure in executive position, firm age and firm size were transformed by natural logarithm of the corresponding raw data.