



# A “strategy tripod” perspective on export behaviors: Evidence from domestic and foreign firms based in an emerging economy

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## Abstract

We integrated the resource-, institution-, and industry-based views to investigate the determinants of export propensity and export intensity, and examined performance outcomes of firms' export behaviors using the longitudinal data of 18,644 domestic private enterprises and foreign wholly owned subsidiaries in China from 2001 to 2005. We found that institutional environment has significant effects on export behaviors above and beyond the impact of firm competencies and industry factors. Furthermore, firm competencies have differential effects on firms' export behaviors. Those firms that do not possess distinct firm competencies and those that have cost leadership competencies only do not benefit financially from exporting. *Journal of International Business Studies* (2010) 41, 377–396. doi:10.1057/jibs.2009.27

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## INTRODUCTION

Exporting, as opposed to other modes of foreign market entry, is the quickest and easiest way for firms to penetrate foreign markets and engage in internationalization (Johanson & Vahlne, 1977, 1990; Root, 1994). It requires fewer organizational resources, provides greater flexibility for managerial actions, and involves lower business risks than other modes of entry such as licensing and equity investment (Leonidou, Katsikeas, Palihawadana, & Spyropoulou, 2007). Globalization and the rapid growth of international trade have further made it imperative for firms to seek opportunities for market expansion. Governments in emerging economies have increasingly provided incentives for both local and foreign-invested firms to actively export and compete in foreign markets (Aulakh, Kotabe, & Teegen, 2000; Kotler, Jatusripitak, & Maesincee, 1997; Luo, 2000). Given that many firms from emerging economies lack experience in marketing their products abroad, it is imperative for them to comprehend the impetus for export behaviors and, more importantly, the outcomes of such behaviors. However, there have been few empirical studies conducted on export behaviors of firms from emerging economies or the performance implications of such behaviors (e.g., Aulakh et al., 2000). This represents a notable research gap in exporting.

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There have been many empirical studies conducted on the determinants of export performance (Fernández & Nieto, 2006; Filatotchev, Dyomina, Wright & Buck, 2001; Zhao & Zou, 2002; for a review, see Aaby & Slater, 1989; Zou & Stan, 1998). At the macro level, researchers have investigated variables including comparative advantage, government policies, exchange rate fluctuations, and domestic market characteristics. Micro-level research focuses on factors including export strategies, managerial perceptions and attributes, firm resources, and firm capabilities/competencies. Although studies that have examined export performance using the developed nation context are abundant, much of the knowledge regarding successful export performance is fragmented, often resulting in inconsistent findings. In rectifying such a deficiency, Aaby and Slater (1989) proposed an integrative model of export performance in synthesizing export knowledge. However, their literature review focused only on factors closely related to managerially controllable variables, thus omitting the effects of external environmental factors on export performance. In an effort to better synthesize and assimilate the fragmented knowledge on export performance, and to overcome the weaknesses pointed out in previous reviews, Zou and Stan (1998) conducted a review of the empirical literature on export performance by including both internal and external determinants of export performance. Specifically, internal determinants are informed by the resource-based view, whereas external determinants are supported by industrial organization theory.

Despite the excellent efforts by these researchers in reviewing and synthesizing the export performance literature, they have assumed institutions as "background" (Peng, Wang, & Jiang, 2008). This represents a serious shortcoming, as institutions in emerging economies differ drastically from those in developed countries (Seligman, 1999; Shenkar, 2005). The role of institutions is more salient in emerging economies because the rules are being fundamentally and comprehensively changed, and the scope and pace of institutional transitions are unprecedented (Peng, 2003). Indeed, as institutions in emerging economies significantly shape the strategies and performance of both domestic and foreign-invested firms, omitting institutional environments in examining the drivers of export behaviors and performance has seriously limited our understanding of exporting.

In our study, therefore, we address two questions:

- (1) Does the institutional environment affect export behaviors of firms based in emerging economies, above and beyond resource- and industry-based factors?
- (2) What are the effects of firms' export behaviors on firm performance?

We attempt to correct the deficiencies in the extant literature on exporting by addressing these two questions based on the "strategy tripod" perspective introduced by Peng (2006) and Peng et al. (2008). We contribute theoretically to the extant literature on exporting by integrating the resource-, institution-, and industry-based views in examining the factors that influence a firm's export propensity (whether firms export or not) and export intensity (export sales as a percentage of total sales), and their relationships with firm performance. We tested these relationships by empirically using a 4-year comprehensive longitudinal data set from China. In response to Wright, Filatotchev, Hoskisson and Peng's (2005) call for research on comparing domestic and foreign firms' strategies in emerging markets, we included both domestic private enterprises and foreign wholly owned subsidiaries based in China, and compared export behaviors between these two types of firms.

We chose China as the research context for the following reasons. Since China liberalized its economy for trade and investment in the late 1970s, it has risen as a globally influential economic powerhouse. With an annual growth rate of approximately 10% in the last two decades, China now ranks as one of the world's largest economies and trading partners for many major economies, including the EU, the US, and Japan. Worldwide exports reached US\$13.7 trillion in 2007, and China became the largest exporter, with US\$1.22 trillion in exports, surpassing the United States with US\$1.14 trillion (CIA, 2008). Many Chinese firms have pursued internationalization, and the Chinese government has adopted a flexible and practical approach to govern these firms' international initiatives (Liu & Li, 2002), thus providing a unique institutional environment for exporting. Likewise, many foreign-invested firms have established manufacturing operations in China to capitalize on its high economic growth, huge market size, and low labor cost. Consequently, China has become an excellent sourcing and exporting platform, and a marketing location for

both Chinese and foreign firms to improve their firm performance. Thus the Chinese market provides an excellent research context to capture the complexity of exporting using the "strategy tripod" perspective.

### THEORETICAL FOUNDATION AND HYPOTHESES DEVELOPMENT

There exist several studies examining firms' export behaviors and strategies in China. Researchers have investigated the determinants of firms' export behaviors indicated by export propensity and export intensity (Buck, Liu, Wei, & Liu, 2007; Zhao & Zou, 2002) and the effects of different product strategies

and capabilities on export performance (Brouthers, O'Donnell, & Hadjimarcou, 2005; Brouthers & Xu, 2002; Zou, Fang, & Zhao, 2003). However, more studies have examined the effects of internal, as opposed to external, factors on firms' export behaviors (Zou & Stan, 1998). In particular, institutional environment factors have mostly been neglected in the extant literature, despite the fact that institutional factors have a direct effect on firms' behaviors and strategic choices, especially in emerging economies that are experiencing drastic institutional changes (Peng, 2003; Peng et al., 2008). We summarize the major findings of studies on firms' export behaviors and strategies in China in Table 1.

**Table 1** A summary of studies of export strategy in China

| <i>Studies</i>          | <i>Sample</i>   | <i>Key findings</i>  |
|-------------------------|---|--|
| Brouthers and Xu (2002) | Survey data of 88 Chinese export companies located at developed and coastal provinces                     | <ol style="list-style-type: none"> <li>(1) Performance satisfaction decreases when Chinese exporters pursue price leadership product strategies and increases when they pursue branding product strategies.</li> <li>(2) Chinese exporters can significantly increase performance satisfaction when using branding product strategies and targeting other less-developed countries.</li> </ol> |
| Zhao and Zou (2002)     | Secondary data of 1649 Chinese manufacturing firms from <i>China's Leading Companies</i>                  | <ol style="list-style-type: none"> <li>(1) Chinese manufacturing firms' export propensity and intensity are significantly lower in a highly concentrated industry than in a less concentrated industry.</li> <li>(2) Firms located in coastal areas have higher export propensity and intensity than firms located in inland areas.</li> </ol>   |
| Zou et al. (2003)       | Survey data of 176 product-market export ventures of 50 companies located at an eastern province of China | <ol style="list-style-type: none"> <li>(1) Export marketing capabilities including distribution, communication, and product development capabilities have significant effects on financial performance of export ventures.</li> <li>(2) Low-cost and branding advantages mediate the relationship between export marketing capabilities and export financial performance.</li> </ol>           |
| Brouthers et al. (2005) | Survey data of 68 Chinese and 33 Romanian exporters   | <ol style="list-style-type: none"> <li>(1) Exporters from emerging markets can imitate the home country MNEs' generic product strategies in Triad nations.</li> <li>(2) Exporters that successfully fit host country strategies achieve high levels of satisfaction with export performance.</li> </ol>  |
| Buck et al. (2007)      | Secondary panel data of 7697 Chinese firms in 1998–2001   | <ol style="list-style-type: none"> <li>(1) Multinational enterprises in China positively affect local Chinese firms' export behaviors.</li> <li>(2) FDI from Hong Kong, Macau, and Taiwan generates a stronger effect on export propensity than FDI from OECD countries.</li> </ol>  |

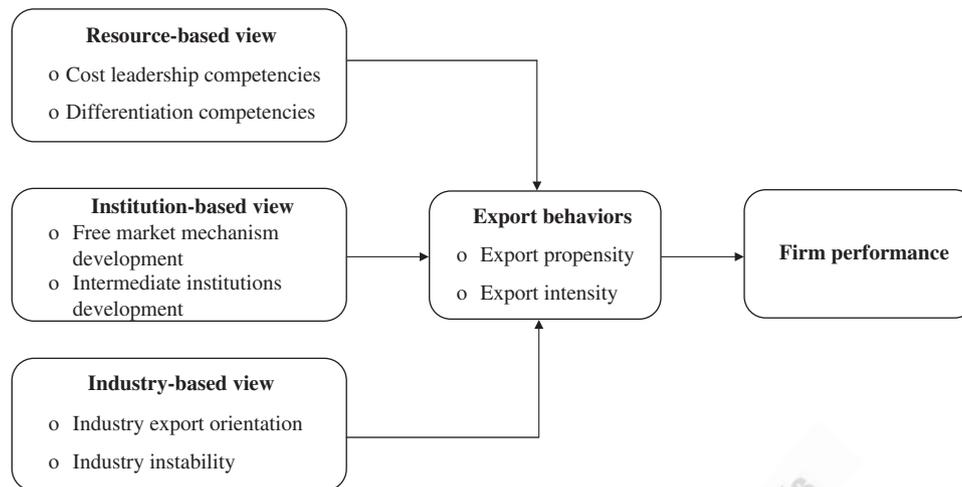


Figure 1 A “strategy tripod” perspective.

In using an emerging economy as a new empirical context to test and extend existing theories, it is imperative that IB researchers strive to contribute to the *theoretical* development of the overall field of business disciplines and social sciences (Meyer, 2006, 2007; Peng et al., 2008). Research focusing on an emerging economy can help lead to the emergence of an institution-based view of strategy, in conjunction with the traditional resource- and industry-based views (Peng, 2006; Peng et al., 2008). The rise of the institution-based view as an influential theoretical tool is an outcome of Kiggundu, Jørgensen, & Hafsi’s (1983) call for new theoretical tools to capture the complex and rapid change in the organization–environment relationships in emerging economies. In using a “strategy tripod” (i.e., resource-, institution-, and industry-based) perspective, we contribute to the theory building of exporting research. Based on these paradigms, we developed hypotheses in examining the determinants and performance outcomes of firms’ export propensity and export intensity in an emerging economy. Our conceptual model is presented in Figure 1.

The resource-based view focuses on the origins of firms’ competitive advantage, and addresses why firms in the same industry vary systematically in performance over time (Barney, 1991; Teece, Pisano, & Shuen, 1997; Wernerfelt, 1984). According to the resource-based view, firms accumulate both tangible and intangible resources that represent the ultimate sources of competitive advantage (Barney, 1991; Collis, 1991; Zou et al., 2003). This perspective focuses on the internal factors of firms,

thus complementing the traditional emphasis of strategy on industry structure and strategic positioning within the industry as the determinants of competitive advantage (Eisenhardt & Martin, 2000; Porter, 1980). It assumes that resources are heterogeneously distributed across firms, and that resource differences persist over time (Wernerfelt, 1984). The two types of resources that are necessary for creating competitive advantages are assets and capabilities (Day, 1994; Zou et al., 2003). Assets are a firm’s accumulated resource endowments (e.g., investments in the facilities). Capabilities (or competencies) are a firm’s accumulated knowledge and skills that enable the firm to coordinate activities by deploying its assets advantageously (Day, 1994; Zou et al., 2003). Thus the resource-based view stresses that firms with superior systems and structures have better performance. This is the case not because firms make strategic investments that may deter entry and raise prices above long-term costs, but rather because they have substantially lower costs, or offer substantially higher quality or product performance (Teece et al., 1997). Based on the resource-based view, a firm’s internal competencies drive its export behavior, which in turn affects firm performance. In the extant literature on exporting, firm resources and competencies that have been used include R&D activity and uniqueness of product (Schlegelmilch & Crook, 1988) and technological intensity (Aaby & Slater, 1989) to measure differential advantages and resources; Aulakh et al. (2000) have also used cost leadership and differentiation in examining export performance. In our study, we examined



cost leadership and differentiation competencies as a firm's internal competencies that are related to export propensity and export intensity (Aulakh et al., 2000).

Defined as "the rules of the game" (North, 1990; Scott, 1995), institutions exhibit significant legitimacy pressures for firms, and directly affect firms' strategic choices and performance consequences (Hoskisson, Eden, Lau, & Wright, 2000; Peng, 2003; Peng et al., 2008; Wright et al., 2005). The institution-based view asserts that firms sharing the same environment will adopt similar practices, thus becoming "isomorphic" with each other. Driven by legitimacy motives, firms conform to institutional pressures (DiMaggio & Powell, 1983; Kostova & Roth, 2002). Broadly speaking, institutions can be classified as formal and informal ones that guide societal transactions in the areas of politics, law, and society. The institution-based view focuses on the interplay between institutions and organizations, and considers strategic choices as the outcomes of such interplay. Specifically, in addition to industry conditions and firm competencies, formal and informal constraints of a particular institutional environment that managers encounter also drive their strategic choices (Peng et al., 2008). In other words, institutions determine directly how firms formulate and implement strategy that creates a competitive advantage (Ingram & Silverman, 2002; Peng et al., 2008). As profound differences in institutional frameworks exist between emerging and developed economies (Peng et al., 2008), it is critical to include the institutional environment when examining firms' export behaviors and export performance in an emerging economy such as China. In our study, we used free market mechanism development (represented by market-determined prices and the reduction of local protectionism) and intermediate institutions development (represented by market intermediaries development, consumer rights protection, and intellectual property right development) as factors for institutional environment in China, as these are often regarded as the two most important indicators for the business environment in emerging economies.

The industry-based view, pioneered by Porter (1980), stresses that the key principle of competitive strategy formulation is a firm's relationship to its environment, represented by the industry in which it competes. In other words, external factors determine the firm's strategy, which in turn affects its performance (Scherer & Ross, 1990). Thus the

external environment exerts pressures to which a firm must adapt to survive and prosper (Collis, 1991). While firms' dependence on the external environment poses constraints on their strategic choices, they can manage their dependence by developing appropriate competitive strategies. Firms develop and implement competitive strategies in an attempt to alter their position in the industry *vis-à-vis* competitors and suppliers. Hence industry factors play a critical role in determining and limiting a firm's strategic behavior (Teece et al., 1997). Based on this rationale, the industry factors are the primary determinants of a firm's export behaviors (Cavusgil & Zou, 1994; Zou & Stan, 1998). Various industry factors have been used in the extant literature on exporting, for example industry export intensity (Naidu & Prasad, 1994), industry export orientation (Campa & Goldberg, 1997), and industry instability (Sakakibara & Porter, 2001). In our study, we examined industry export orientation and industry instability as industry factors that are related to export behaviors.

#### Firm Competencies

The resource-based view suggests that a firm can gain a competitive advantage through deploying its valuable, rare, inimitable, and non-substitutable resources (Barney, 1991). Performance differences between firms result not only from the control of idiosyncratic resources, but also from competencies that combine and transform available resources into superior customer value (Barney, 1991; Day, 1994). Firms can develop competitive competencies with respect to competitors in a specific industry through the strategies either of cost leadership or of differentiation (Porter, 1980, 1985). The literature has provided supportive evidence for the link between these two competitive strategies and firm performance (e.g., Aulakh et al., 2000; David, Hwang, & Pei, 2002; Spanos, Zaralis, & Lioukas, 2004).

Consistent with those previous studies, we define firms' realized competencies along the dimensions of cost leadership and differentiation, which reflect an observable pattern of strategic resources deployment (Mintzberg, 1978). Firms pursuing a cost leadership strategy aim to enhance performance and increase market share based on competitive advantages through a low-cost position relative to their rivals. In order to achieve cost leadership competencies, firms have to outperform their competitors in activities of producing, selling, and

delivering goods and services to customers by providing consumer value at lower costs. Cost leadership competencies require large-scale production facilities, rigorous process improvements, cost reduction through experience, cost control, and cost minimization in R&D, advertising, sales, and services. Because of the ability to match competitors' offerings at lower prices, firms with realized cost leadership competencies can achieve above-average returns (Porter, 1980, 1985).

Firm characteristics and competencies are considered as important determinants of export behaviors (Zou & Stan, 1998). If firms' domestic competitive competencies enable them to engage in exporting, they can leverage such strengths in international markets. For example, Salomon and Shaver (2005) have found that domestic and export sales are complements for Spanish-owned firms, and their strengths in the domestic market drive export sales. Moreover, firms with cost leadership competencies can rely on their domestic competitive advantages to compete in international markets. Therefore we expect that firms from China that have developed cost leadership competencies in the domestic market are more likely to become exporters and have higher export volumes. Hence we hypothesize:

**Hypothesis 1:** Cost leadership competencies are positively related to (a) the export propensity and (b) the export intensity of a firm.

Firms pursuing differentiation strategies emphasize producing a good or a service that customers perceive as unique and are willing to pay a premium price for (Porter, 1980, 1985). Differentiation strategies can be realized through creating strong brand equity, continuous innovation, advanced technology, and superior customer service. To implement such a strategy, firms have to make investments in costly activities such as extensive R&D, product design, and brand development. If firms can successfully differentiate themselves from rivals in the marketplace, they can enjoy above-market prices, because differentiation strategies can create high customer loyalty. Firms can achieve competitive advantages through differentiation strategies, which in turn enhance firm performance. Moreover, compared with advantages through cost leadership, differentiation advantages are more difficult for competitors to imitate and hence are more likely to be sustained (Barney, 2002).

In the exporting literature, researchers have found that technology level or R&D intensity are positively associated with export propensity (e.g., Benvignati, 1990). However, findings of the impact of technology on export intensity are inconsistent, with some studies reporting positive effects whereas others report insignificant or even negative effects (cf. Aaby & Slater, 1989; Zou & Stan, 1998). Despite the inconsistency, researchers have suggested that firms can make investment in R&D in order to innovate for foreign markets (Kuemmerle, 1999). Firms with realized differentiation competencies are better equipped to compete in the export market. Firms' ability to apply their differentiation competencies to export markets affects their export behaviors.

**Hypothesis 2:** Differentiation competencies are positively related to (a) the export propensity and (b) the export intensity of a firm.

### **Institutional Environment**

Institutions significantly shape firms' strategy and behaviors, because of their salient role in emerging economies, and consequently we posit that firms' export behaviors may be stimulated or deterred by the institutional environment. As the largest emerging economy, China has been experiencing the change from a centrally planned to a market-based economy through liberalization and privatization, accompanied by institutional transitions in political systems, legal frameworks, and market structures (Child & Tse, 2001; Peng & Heath, 1996). Because the institutional transition is far from complete in China, formal institutions including legal system and regulations remain weak, while informal institutions still play a significant role in driving firm behaviors (Chen & Chen, 2004; Luo, 2000).

Firms can face serious institutional difficulties because of government control and the imperfection of the market mechanism (Nee, 1992). In addition, the central government has delegated some authority to lower-level governmental units, so provincial governments can formulate policies to govern business operations. For instance, the provincial government usually controls key resources, including raw materials and energy. Since the Chinese government exercises control over firms' operations and management in terms of resource distribution, investment size, bank loans, and strategic organizational changes, firms operating in China opt for developing relationships with



both central and provincial government officials and legislators, who have the power to ratify projects, allocate resources, arrange financing, supply raw materials, and provide opportunities that are vital to firms' growth (Luo, 2000).

Institutional changes are expected to foster more transparent rules of the game and increase market efficiency. As predicted by Peng (2003), there will be a longitudinal process from a relationship- to a market-based structure. Because of the institutional transition in China, many barriers for business operations have gradually been removed. However, the extent of the transition to the market economy still varies between different locations and industries. The development of a free market mechanism increases the efficiency of market transactions and resources allocation in the industry, which is helpful for firms in achieving economies of scale nationally. Firms' dependence on government relationships to secure resources can be reduced (Child & Tse, 2001). Moreover, the development of intermediate institutions also reduces the transaction and agency costs and uncertainties for firms. Firms would then rely less on bureaucrats for contract enforcement and dispute settlement (Walder, 1995). Therefore an improved institutional environment can foster a better overall business environment and facilitate firms' export behaviors.

**Hypothesis 3a:** The development of free market mechanisms is positively related to (a) the export propensity and (b) the export intensity of a firm.

**Hypothesis 3b:** The development of intermediate institutions is positively related to (a) the export propensity and (b) the export intensity of a firm.

### Industry Factors

Firms often imitate the export behaviors of other firms within the same industry. First, firms can gain benefits from exporting by enjoying economies of scale, revenue diversification, and larger market powers. Other firms exporting to foreign markets may serve as an important signal of export attractiveness. Moreover, exporting firms can create external economies and information spillover, which in turn reduce the costs of exporting. Second, an industry is an organizational field providing relevant information about the characteristics and behaviors of firms. Firms usually observe and follow their competitors' behaviors in the same industry because the decisions and

actions by competitors increase the legitimacy of similar actions (Guillén, 2003; Scott, 1995). The desire to conform to the established norms often leads to inter-organizational mimetic behaviors (DiMaggio & Powell, 1983). The oligopolistic reaction theory suggests that firms pursue follow-the-leader strategies in locating foreign investments (Knickerbocker, 1973). The literature has provided empirical evidence about mimetic behaviors in entry mode decisions in foreign markets (Guillén, 2003), international expansions of automotive components of supplies (Martin, Swaminathan, & Mitchell, 1998), and location choices of chain acquisitions (Baum, Li, & Usher, 2000). Hence other firms' export behaviors in the same industry serve as a reference point and subsequently increase the attractiveness of exporting.

**Hypothesis 4:** The export orientation of an industry is positively related to (a) the export propensity and (b) the export intensity of a firm.

In addition, domestic industry instability can have a direct effect on firms' export behaviors. Industry instability measures the sum of fluctuations of the market share of each individual firm in a specific industry. When the domestic market is stable, firms may have little motivation to explore sales opportunities in the export market because export markets are comparatively riskier. Moreover, competitive pressures in the home market can keep firms actively pursuing innovation activities, which eventually produce a competitive industry in world trade (Porter, 1980, 1985; Sakakibara & Porter, 2001). Sakakibara and Porter (2001) have found a strong relationship between market instability and world export share, using a sample of Japanese firms. Salomon and Shaver (2005) have further suggested that domestic and export sales are substitutes for foreign-invested firms in Spain.

In China, the transition toward a market economy has created one of the most competitive markets in the world. The rise of township and village enterprises and private enterprises brings new forces to the economy, and foreign-invested firms also exert high competitive pressures for local firms (Buckley, Clegg, & Wang, 2002; Shenkar, 2005). A number of firms have emerged as powerful competitors in the global market, including Haier, Lenovo, and Galanz. Some have become successful exporters through leveraging their competitive advantages in the domestic market (Zeng & Williamson, 2003). As the domestic market

becomes saturated and more competitive, firms are compelled to consider exporting and search for opportunities in international markets.

**Hypothesis 5:** Instability of the industry is positively related to (a) the export propensity and (b) the export intensity of a firm.

### Performance Implications

Export performance has received much attention in the exporting literature. Researchers have measured export performance in various ways, including sales, profits, and changes of performance; the most frequently used measure in previous studies is export intensity (Leonidou, Katsikeas, & Samiee, 2002; Shoham, 1998; Zou & Stan, 1998). Numerous studies have examined the determinants of export intensity. However, whether export intensity contributes to firm-level performance has attracted only limited attention.

In the economics literature, previous studies have provided consistent evidence that export firms have higher levels of productivity than non-exporters (e.g., Bernard & Jensen, 2004; Greenaway & Kneller, 2004). Furthermore, researchers have found that for firms that engage in exporting activities, the knowledge gained from international markets can improve performance, measured by total factor productivity (e.g., Alvarez & Lopez, 2005; Blalock & Gertler, 2004). However, several studies have indicated a negative relationship between export intensity and firm financial performance. Ito (1997) found that export intensity had a negative effect on ROA (return on assets) for a sample of Japanese manufacturing firms in 1985. This suggests that firms may be forced to sell products abroad to maintain employment, even with lower profitability. Geringer, Tallman, and Olsen (2000) have concluded that exporting activities contribute positively to Japanese multinational firms' performance, measured by ROS (return on sales), but only for a very limited time period. Using a sample of small- and medium-sized Japanese firms, Lu and Beamish (2001) have also found a negative relationship between export intensity and firms' ROA. They suggested that the relationship is affected by Japanese yen appreciation, which significantly increased the costs of exporting. Small- and medium-sized firms were forced to lower the prices of export goods, and suffered from a diminished export margin. We posit that firms need to possess competitive advantages in the export market in order to compete for

financial success. Otherwise, export behaviors may not bring benefits for firms. Hence export propensity and export intensity can contribute to better performance for firms with realized competencies in the domestic market.

**Hypothesis 6:** (a) Export propensity and (b) export intensity are positively related to firm performance for a firm with realized competencies.

## METHOD

### Data

Our main data source is the Annual Census of Chinese Industrial Firms (2001–2005), which is conducted by the National Bureau of Statistics of China. It covers all industrial enterprises, including domestic and foreign-invested firms with at least 5 million RMB (or approximately US\$676,000) annual sales. The data set provides detailed information on a firm's identification, assets, liabilities, capital structure, financial performance, total shipments and exported shipments, among others. The number of manufacturing enterprises with valid total shipments and exported shipments information in the database varies from 152,000 to 243,000 for various years. According to the data from China statistical yearbooks, the database consistently represents approximately 70% of China's total export during the period. The data set is suitable for studying the export strategy of firms from China for the following reasons. First, Chow (1993) has reported that census data are reliable and internally consistent for empirical studies. Studies using the data have been published in leading journals (e.g., Pan, Li, & Tse, 1999; Tan & Peng, 2003). Second, the multi-year census data enable us to employ a panel data structure to test our models. Thus we can investigate firms' export behaviors over time, and test the dynamic causal relationship, which is the main advantage over static cross-sectional data (Filatotchev et al., 2001; Fitzmaurice, Laird, & Ware, 2004).

Export policies in China have experienced dramatic changes for both domestic and foreign firms in the last two decades. First, the export behaviors of foreign firms in China were formerly subject to strict government controls. Since the 1980s, China has adopted policies to encourage foreign firms to establish export-oriented firms. According to the Law on Foreign-invested Enterprises of the People's Republic of China adopted in 1986, foreign-invested firms must either make investment in

high technology and realize import replacement, or export at least 50% of total outputs annually. These restrictions were removed in 2001. Second, China established two separate trading regimes during the mid-1980s. Foreign firms were allowed to use direct exporting for their own products (Naughton, 1996). However, exporting of domestic firms had to be channeled through state trading companies. With China's accession to the WTO in 2001, all firms are now entitled to obtain direct export rights, including private enterprises.

In our study, we focus on domestic private enterprises and foreign wholly owned subsidiaries. Domestic private enterprises include the following types: individual invested private enterprises; joint enterprises by private investors; private limited liability corporations; and private shareholding enterprises. Domestic private enterprises usually adopt a simple and flexible structure, which enables them to select aggressive strategies and react quickly to market opportunities (Peng, Tan, & Tong, 2004). The contribution of domestic private enterprises to China's export has increased significantly, and they accounted for 17.8% of the overall export volume in 2006. Ample evidence has demonstrated that foreign-invested firms in China have been a driving force for its economic and export growth. According to statistics provided by China Customs, foreign-invested firms produced 58.2% of the export volume from China in 2006. Therefore a study on exporters based in China is deemed not comprehensive if it excludes foreign-invested firms.

We excluded SOEs from our study because the government still heavily controls SOEs' operations and strategies. Although the government has undertaken various reforms to change the mechanism of SOEs, most SOEs in China continue to rely on the government (Peng et al., 2004). Moreover, SOEs' contribution to the overall economy has dropped substantially because of the reform and privatization of SOEs in China. Although SOEs account for 32.3% of the total sales of industrial enterprises with at least 5 million RMB sales, they contributed only 19.8% of China's export volume in 2006.

In constructing a balanced panel of domestic private enterprises and foreign wholly owned subsidiaries during 2001–2005, we obtained a balanced sample of 18,644 firms. Because we used lagged firm-level variables in our models to eliminate endogeneity problems and establish casual

relationships, we dropped the data of 2001. In doing so, the number of observations used in our analyses was 74,576 ( $4 \times 18,644$ ), with 49,372 domestic private enterprises and 25,204 foreign wholly owned subsidiaries.

### Measurement of Variables

We provide the measurement for the dependent, independent, and control variables as follows.

**Dependent variables.** Following the literature, we used two dependent variables – export propensity and export intensity – to measure export behaviors (e.g., Fernández & Nieto, 2006; Zhao & Zou, 2002). Export propensity equals 1 if a firm exports a positive proportion of its output in a specific year, and 0 otherwise. Export intensity equals the ratio of export sales to total sales by a firm in a specific year. For the effects of export behaviors on firm performance, we used ROS.

**Independent variables.** We measured *Firm Competencies* of a firm *i*'s competitive position along the dimensions of cost leadership and differentiation as the divergence from typical levels of the three-digit industries (MacKay & Phillips, 2005). In constructing the industry-year median, we excluded the firm itself. We divided this deviation by the range of different measures in each industry-year, thus bounding these proxies by  $-1$  and  $1$ . The measures of cost leadership and differentiation competencies can be expressed as

$$\begin{aligned} & \text{Cost Leadership Competencies}_{i,t} \\ &= \frac{(CL)_{i,j,t} - \text{median}_{-i,j,t}(CL)}{\text{range}\{[(CL)_{i,j,t} - \text{median}_{-i,j,t}(CL)] \forall i \in j, t\}} \in [-1, 1] \end{aligned} \quad (1)$$

$$\begin{aligned} & \text{Differentiation Competencies}_{i,t} \\ &= \frac{(DF)_{i,j,t} - \text{median}_{-i,j,t}(DF)}{\text{range}\{[(DF)_{i,j,t} - \text{median}_{-i,j,t}(DF)] \forall i \in j, t\}} \in [-1, 1] \end{aligned} \quad (2)$$

where *i* stands for firm, *j* stands for industry sector, and *t* stands for year.

Following the literature, we measured cost leadership competencies by: (1) production cost to total sales ratio; and (2) selling and administrative cost to total sales ratio (Berman et al., 1999; Nair & Filer, 2003). Small values of these numbers indicate better operational efficiency for firms. Differentiation competencies were measured by: (1) R&D

intensity, which is R&D expenses divided by total sales; and (2) new product outputs to total outputs ratio (David et al., 2002; Thomas, Litschert, & Ramaswamy, 1991). In order to pursue a successful differentiation strategy, a key factor is the ability to offer innovative goods and services in the marketplace (Porter, 1980, 1985).

We used two *Institutional Environment* indices for (1) free market mechanism development, and (2) intermediate institutions development. Because of the institutional transition and unbalanced development across different regions in China, institutional environments in different provinces are quite different. The institutional indices were developed by the National Economic Research Institute (NERI) for regional marketization level for different provinces in China. The indices reflect the development status of market trading mechanisms and other institutions in achieving more efficient market functioning.

The index of free market mechanism development captures two sub-indices of the percentage of products with market-determined prices and the reduction of local protectionism, which affect a firm's ability to decide where and at what price to sell their products. The index of intermediate institutions development, on the other hand, was measured by three sub-indices of market intermediaries development, consumer rights protection, and intellectual property right development that secure a firm's property rights in case disputes happen while the firm is selling its products (Child & Tse, 2001). Sub-indices were computed by NERI using data from the statistical yearbooks, reports from the administration of industry and commerce, and survey data, etc. A score for each province was given based on objective measures, such as the ratio of lawyers or the ratio of accountants to the provincial population, and then normalized to a value between 0 and 10 proportionately to measure institutional conditions relative to other provinces. The NERI indices are available from 1997. We matched the index with our multi-year data. Indices beyond the base year of 1997 were relaxed from the 0–10 restriction to reflect institutional changes over time, and the final indices were weighted averages of sub-indices. The indices have been used in economics and finance studies on China (Chen, Firth, Gao & Rui, 2006; Li, Meng, & Zhang, 2006).

We measured *Industry Factors* as: (1) industry export orientation, by calculating the percentage of exporters in a specific industry; and (2) industry

instability, by following Sakakibara and Porter (2001). We constructed industry instability from the sum of individual market share fluctuations of firms in the market.

$$\text{Industry Instability}_{jt} = \sum_{i=1}^n \frac{|S_{it} - S_{it-1}|}{S_{it-1}} / n \quad (3)$$

where  $S_{it}$  is the domestic market share of the  $i$ th-ranked firm in industry  $j$  for period  $t$ , calculated for all firms available. These two variables are both at three-digit industry levels.

**Control variables.** Following previous studies on export behaviors, we included four control variables in our analyses. Firm size was measured by the logarithm of the number of employees (Verwaal & Donkers, 2002). We also controlled for industry sales growth rate at the three-digit industry level and foreign wholly owned subsidiaries with a dummy variable (foreign subsidiaries=1, domestic firms=0). We report descriptive statistics of variables and the correlation matrix in Table 2. We checked the variance inflation factors and found that the highest value was 1.65, which indicated that multicollinearity was not a serious problem.

## ANALYSIS AND RESULTS

We constructed logistic and tobit models for the estimation of export propensity and export intensity, respectively. All the independent variables were lagged one year in the panel data models, which can provide more consistent estimates of coefficients and identify causal relationships (Filatotchev et al., 2001; Leonidou & Katsikeas, 1996). We included both industry and year fixed effects in the model estimation.

### Export Propensity and Export Intensity

Using the overall sample, we report the results of export propensity and export intensity in Tables 3 and 4, respectively. To clarify the hypothesized effects, we present a series of models with different sets of independent variables for export propensity and export intensity, respectively. We test the effects of firm competencies in Models 1 and 5, institutional environment in Models 2 and 6, industry factors in Models 3 and 7, and all three sets of variables in Models 4 and 8. As shown in Tables 3 and 4, both production cost ratio and selling and administrative cost ratio have negative effects on export propensity and export intensity. Lower values of production cost ratio and selling and administrative cost ratio indicate

Table 2 Descriptive statistics and correlations

|  | 1        | 2        | 3        | 4        | 5        | 6       | 7        | 8       | 9       | 10    | 11   |
|--|----------|----------|----------|----------|----------|---------|----------|---------|---------|-------|------|
| 1. Production cost ratio                 | 1.00     |          |          |          |          |         |          |         |         |       |      |
| 2. Selling and administrative cost ratio | 0.65***  | 1.00     |          |          |          |         |          |         |         |       |      |
| 3. R&D intensity                         | 0.12***  | 0.14***  | 1.00     |          |          |         |          |         |         |       |      |
| 4. New product ratio                     | 0.06***  | 0.04***  | 0.11***  | 1.00     |          |         |          |         |         |       |      |
| 5. Free market mechanism development     | -0.15*** | -0.11*** | -0.01*** | -0.00    | 1.00     |         |          |         |         |       |      |
| 6. Intermediate institutions development | -0.01**  | 0.05***  | -0.01*   | -0.00    | 0.40***  | 1.00    |          |         |         |       |      |
| 7. Industry export orientation           | 0.00     | 0.04***  | -0.01**  | -0.02*** | 0.24***  | 0.24*** | 1.00     |         |         |       |      |
| 8. Industry instability                  | -0.00    | 0.02***  | -0.01*** | -0.01*** | 0.08***  | 0.09*** | 0.32***  | 1.00    |         |       |      |
| 9. Wholly owned subsidiary dummy         | 0.10***  | 0.16***  | -0.03*** | -0.04*** | 0.13***  | 0.31*** | 0.26***  | 0.10*** | 1.00    |       |      |
| 10. Firm size                            | 0.02***  | 0.01**   | 0.02***  | 0.05***  | 0.10***  | 0.04*** | 0.24***  | 0.07*** | 0.23*** | 1.00  |      |
| 11. Industry growth rate                 | -0.00    | -0.01*** | -0.02*** | -0.00    | -0.05*** | 0.00    | -0.03*** | 0.14*** | -0.01*  | -0.00 | 1.00 |
| Mean                                     | 0.03     | 0.01     | 0.01     | 0.03     | 9.12     | 6.79    | 0.34     | 1.27    | 0.35    | 5.10  | 0.13 |
| SD                                       | 0.13     | 0.08     | 0.07     | 0.13     | 1.10     | 2.18    | 0.20     | 2.43    | 0.48    | 1.04  | 0.21 |

\*\*\*p<0.001, \*\*p<0.01, \*p<0.05.

cost leadership competencies. Therefore firms with realized competencies of cost leadership are more likely to export and have high levels of export intensity. Hence Hypothesis 1 is supported. Hypothesis 2 posits that firms with differentiation competencies are more likely to be involved in export markets and have high export intensity. The results suggest that new product ratio is significantly related to export propensity and export intensity, while R&D intensity only has a significant effect on export propensity but not on export intensity, providing partial support for Hypothesis 2.

Hypotheses 3a and 3b deal with the impact of the institutional environment on firms' export behaviors. The results show that the indices of free market mechanism development and intermediate institutions development both have strong effects on export propensity and export intensity, supporting both Hypothesis 3a and Hypothesis 3b. Industry export orientation has significant effects on both export propensity and export intensity. Therefore Hypothesis 4 is also supported. However, industry instability is not significantly associated with either export propensity or export intensity. Thus Hypothesis 5 is not supported.

### Domestic Private Enterprises vs Foreign Wholly owned Subsidiaries

We further conduct subgroup analysis for domestic private enterprises and foreign wholly owned subsidiaries. We present the results in Table 5. The findings suggest that firm competencies exhibit different effects on export propensity and export intensity for domestic private enterprises and foreign wholly owned subsidiaries. For domestic private enterprises, both production cost ratio and selling and administrative cost ratio have significantly negative effects on both export propensity and export intensity. Both R&D intensity and new product ratio are positively significantly related to export propensity and export intensity. For foreign wholly owned subsidiaries, production cost ratio is negatively associated with export propensity and export intensity. Selling and administrative cost ratio has a significantly negative effect on export intensity, but not on export propensity. R&D intensity has no significant effects on export behaviors. Moreover, contrary to domestic private enterprises, new product ratio has a significantly negative impact on export intensity. The results indicate that cost leadership and differentiation competencies increase export propensity and export intensity for domestic private enterprises.

**Table 3** Export propensity: The overall sample in 2002–2005

| Independent variables                 | Export propensity            |                                      |                             |                     |
|---------------------------------------|------------------------------|--------------------------------------|-----------------------------|---------------------|
|                                       | Firm competencies<br>Model 1 | Institutional environment<br>Model 2 | Industry factors<br>Model 3 | Combined<br>Model 4 |
| Intercept                             | -1.86***<br>(0.07)           | -5.91***<br>(0.12)                   | -4.89***<br>(0.09)          | -7.97***<br>(0.13)  |
| Production cost ratio                 | -1.29***<br>(0.09)           |                                      |                             | -0.93***<br>(0.10)  |
| Selling and administrative cost ratio | -0.72***<br>(0.14)           |                                      |                             | -0.73***<br>(0.15)  |
| R&D intensity                         | 0.71***<br>(0.13)            |                                      |                             | 0.67***<br>(0.14)   |
| New product ratio                     | 0.72***<br>(0.07)            |                                      |                             | 0.71***<br>(0.07)   |
| Free market mechanism development     |                              | 0.37***<br>(0.01)                    |                             | 0.30***<br>(0.01)   |
| Intermediate institutions development |                              | 0.08***<br>(0.00)                    |                             | 0.07***<br>(0.00)   |
| Industry export orientation           |                              |                                      | 4.80***<br>(0.08)           | 4.48***<br>(0.08)   |
| Industry instability                  |                              |                                      | -0.00<br>(0.00)             | -0.00<br>(0.00)     |
| <i>Control variables</i>              |                              |                                      |                             |                     |
| Wholly owned subsidiary dummy         | 1.88***<br>(0.02)            | 1.68***<br>(0.02)                    | 1.75***<br>(0.02)           | 1.76***<br>(0.02)   |
| Firm size                             | 0.52***<br>(0.01)            | 0.54***<br>(0.01)                    | 0.52***<br>(0.01)           | 0.54***<br>(0.01)   |
| Industry growth rate                  | 0.09*<br>(0.05)              | 0.05<br>(0.05)                       | 0.02<br>(0.05)              | -0.00<br>(0.05)     |
| Tau-a                                 | 0.32                         | 0.33                                 | 0.34                        | 0.35                |
| Log likelihood                        | 25,080.83                    | 27,065.32                            | 28,809.40                   | 31,015.57           |
| Concordant                            | 81.8%                        | 83.0%                                | 83.9%                       | 85.0%               |
| Number of observations                | 74,576                       | 74,576                               | 74,576                      | 74,576              |

\*\*\*p < 0.001, \*\*p < 0.01, \*p < 0.05.

Industry and year fixed effects are included and not shown.

However, for foreign wholly owned subsidiaries, only those with cost leadership competencies have high levels of export intensity; those with differentiation competencies have low levels of export intensity.

Institutional environment has significant effects on export behaviors for both domestic private enterprises and foreign wholly owned subsidiaries. The effects of industry export orientation are consistent across the two groups of firms.

**Performance Implications**

Since firms can self-select export behaviors, performance outcomes may be affected by unobserved factors that influence firms' export choices. We

adopted a two-stage model to estimate the impact of export behaviors on firm performance to correct for the potential self-selection biases (Heckman, 1979; Shaver, 1998). We calculated the inverse Mills ratio based on the results of the first-stage probit model of firms' export behaviors, and then included it as a regressor in the second-stage performance models. The inverse Mills ratio was statistically significant in our models, which suggests that endogeneity may be less of a concern for the performance equations. We obtained consistent results using ROA in the analysis.

To further explore the relationship between export behaviors and firm performance, we divided firms into different groups based on firm

**Table 4** Export intensity: The overall sample of 2002–2005

| Independent variables                 | Export intensity             |                                      |                             |                     |
|---------------------------------------|------------------------------|--------------------------------------|-----------------------------|---------------------|
|                                       | Firm competencies<br>Model 5 | Institutional environment<br>Model 6 | Industry factors<br>Model 7 | Combined<br>Model 8 |
| Intercept                             | −0.33***<br>(0.02)           | −1.68***<br>(0.03)                   | −1.26***<br>(0.02)          | −2.14***<br>(0.03)  |
| Production cost ratio                 | −0.63***<br>(0.03)           |                                      |                             | −0.46***<br>(0.02)  |
| Selling and administrative cost ratio | −0.16***<br>(0.04)           |                                      |                             | −0.18***<br>(0.04)  |
| R&D intensity                         | 0.11**<br>(0.04)             |                                      |                             | 0.07<br>(0.04)      |
| New product ratio                     | 0.12***<br>(0.02)            |                                      |                             | 0.13***<br>(0.02)   |
| Free market mechanism development     |                              | 0.13***<br>(0.00)                    |                             | 0.09***<br>(0.00)   |
| Intermediate institutions development |                              | 0.02***<br>(0.00)                    |                             | 0.02***<br>(0.00)   |
| Industry export orientation           |                              |                                      | 1.57***<br>(0.02)           | 1.42***<br>(0.02)   |
| Industry instability                  |                              |                                      | 0.00<br>(0.00)              | 0.00<br>(0.00)      |
| <i>Control variables</i>              |                              |                                      |                             |                     |
| Wholly owned subsidiary dummy         | 0.56***<br>(0.01)            | 0.48***<br>(0.01)                    | 0.48***<br>(0.01)           | 0.47***<br>(0.01)   |
| Firm size                             | 0.13***<br>(0.00)            | 0.12***<br>(0.00)                    | 0.12***<br>(0.00)           | 0.11***<br>(0.00)   |
| Industry growth rate                  | 0.03*<br>(0.01)              | 0.02<br>(0.01)                       | 0.01<br>(0.01)              | 0.00<br>(0.01)      |
| Log likelihood                        | −52466.28                    | −51240.44                            | −49848.68                   | −48146.59           |
| Number of observations                | 74,576                       | 74,576                               | 74,576                      | 74,576              |

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ .

Industry and year fixed effects are included and not shown.

competencies. We conducted factor analysis for the measures of cost leadership and differentiation competencies. As expected, the factor analysis resulted in two dimensions. We then divided firms into four groups by comparing the two factor scores with the mean levels. We reversed the factor score for cost leadership competencies in the subgroup analysis. Specifically, the pure cost leadership group scored high on cost leadership competencies and low on differentiation competencies; the pure differentiation group scored high on differentiation competencies and low on cost leadership competencies; the hybrid group scored high on both of the two competencies; and the unattractive combination group scored low on the two dimensions.

We report the effects of export propensity and export intensity on firms' ROS for different firm groups in Table 6. After controlling for the effects of

firm size, industry growth rate, and industry and year fixed effects, we found that export propensity and export intensity have significantly negative effects on performance for the sample of all firms, for domestic private firms, and for foreign wholly owned subsidiaries. We then investigated the effects of export propensity and export intensity on performance for different competency groups. For both domestic private enterprises, export propensity and export intensity have negative effects on performance for the pure cost leadership group and the unattractive combination group. For instance, ROS is 0.7% lower for exporting firms than for non-exporting firms, and ROS is 0.007% lower with each 1% increase in export intensity (i.e., the ratio of export sales to total sales) for domestic firms in the pure cost leadership group. From a practical point of view, since the mean ROS

**Table 5** Export propensity and export intensity: Subgroup analysis of domestic private enterprises and foreign wholly owned subsidiaries

| Independent variables                 | Export propensity  |                    | Export intensity   |                    |
|---------------------------------------|--------------------|--------------------|--------------------|--------------------|
|                                       | Domestic Model 9   | Foreign Model 10   | Domestic Model 11  | Foreign Model 12   |
| Intercept                             | -8.97***<br>(0.17) | -5.32***<br>(0.21) | -3.02***<br>(0.05) | -0.98***<br>(0.04) |
| Production cost ratio                 | -1.54***<br>(0.15) | -0.47***<br>(0.13) | -0.64***<br>(0.05) | -0.43***<br>(0.03) |
| Selling and administrative cost ratio | -0.83***<br>(0.23) | -0.34<br>(0.20)    | -0.24**<br>(0.07)  | -0.11**<br>(0.04)  |
| R&D intensity                         | 0.86***<br>(0.17)  | 0.54<br>(0.30)     | 0.15**<br>(0.06)   | 0.01<br>(0.05)     |
| New product ratio                     | 1.02***<br>(0.08)  | -0.23<br>(0.14)    | 0.28***<br>(0.03)  | -0.14***<br>(0.03) |
| Free market mechanism development     | 0.38***<br>(0.02)  | 0.26***<br>(0.02)  | 0.14***<br>(0.01)  | 0.07***<br>(0.00)  |
| Intermediate institutions development | 0.04***<br>(0.01)  | 0.06***<br>(0.01)  | 0.01***<br>(0.00)  | 0.01***<br>(0.00)  |
| Industry export orientation           | 5.17***<br>(0.10)  | 3.01***<br>(0.14)  | 2.00***<br>(0.03)  | 0.84***<br>(0.02)  |
| Industry instability                  | -0.00<br>(0.01)    | -0.00<br>(0.01)    | 0.00<br>(0.00)     | 0.00<br>(0.00)     |
| <i>Control variables</i>              |                    |                    |                    |                    |
| Firm size                             | 0.61***<br>(0.01)  | 0.48***<br>(0.02)  | 0.17***<br>(0.00)  | 0.08***<br>(0.00)  |
| Industry growth rate                  | 0.04<br>(0.06)     | -0.00<br>(0.01)    | 0.01<br>(0.02)     | -0.01<br>(0.01)    |
| Tau-a                                 | 0.26               | 0.18               |                    |                    |
| Log likelihood                        | 13,724.50          | 3872.79            | -28,243.01         | -1778.49           |
| Concordant                            | 80.8%              | 75.2%              |                    |                    |
| Number of observations                | 49,372             | 25,204             | 49,372             | 25,204             |

\*\*\*p<0.001, \*\*p<0.01, \*p<0.05.

Industry and year fixed effects are included and not shown.

for these firms is 3.1%, the change in the level of exporting activities clearly has a measurable effect on firm performance (ROS). The positive effect of export propensity on performance for hybrid firms turned insignificant after we controlled for self-selection bias. For foreign wholly owned subsidiaries, export propensity and export intensity have negative effects on performance for the pure cost leadership group, and export intensity has a negative effect for the unattractive combination group. For foreign firms in pure cost leadership group, ROS is 0.9% lower for exporting firms than for non-exporting firms, and ROS is 0.014% lower with each 1% increase in export intensity. Since the mean ROS for these foreign firms is 2.7%, the change in the level of exporting activities has a measurable effect on firm performance (ROS) as

well. The results suggest that cost leadership competencies cannot bring about financial success from export behaviors. Plausible reasons for this performance implication will be explored in the Discussion section.

### DISCUSSION

Despite the critical role of institutions in emerging economies in shaping the strategy and performance of both domestic and foreign-invested firms, research on exporting by firms from emerging economies has mostly taken a low-context approach and neglected institutional environments in examining the drivers of export behaviors and performance. In our study, we aim to address this oversight by adopting the "strategy tripod" perspective (Peng, 2006; Peng et al., 2008) in

**Table 6** The effects of export propensity and export intensity on firm performance: Subgroup analysis

|  |                                   |                                   |                                   | With correction for self-selection ( $\lambda$ ) |                                   |                                   |                     |                                       |
|--|-----------------------------------|-----------------------------------|-----------------------------------|--|-----------------------------------|-----------------------------------|---------------------|---------------------------------------|
|  | All firms                         | Domestic private enterprises      | Foreign wholly owned subsidiaries | All firms  | Domestic private enterprises      | Foreign wholly owned subsidiaries |                     |                                       |
| <i>Effects on performance (ROS)</i>  |                                   |                                   |                                   |  |                                   |                                   |                     |                                       |
| Export propensity  | 0.001                             | 0.004***                          | 0.013***                          | 0.002*   | 0.010***                          | 0.013***                          |                     |                                       |
| Export intensity   | 0.021***                          | 0.014***                          | 0.032***                          | 0.021***   | 0.011***                          | 0.029***                          |                     |                                       |
| <i>Effects on performance (ROS) for domestic private enterprises by competencies groups</i>      |                                   |                                   |                                   |  |                                   |                                   |                     |                                       |
|  | <i>Pure cost leadership group</i> | <i>Pure differentiation group</i> | <i>Hybrid group</i>               | <i>Unattractive combination group</i>            | <i>Pure cost leadership group</i> | <i>Pure differentiation group</i> | <i>Hybrid group</i> | <i>Unattractive combination group</i> |
| Export propensity  | 0.003***                          | 0.005                             | 0.005**                           | 0.001*   | 0.007***                          | 0.014                             | 0.002               | 0.011**                               |
| Export intensity   | 0.008***                          | 0.007                             | 0.006                             | 0.020***   | 0.007***                          | 0.011                             | 0.004               | 0.017***                              |
| <i>Effects on performance (ROS) for foreign wholly owned subsidiaries by competencies groups</i> |                                   |                                   |                                   |  |                                   |                                   |                     |                                       |
|  | <i>Pure cost leadership group</i> | <i>Pure differentiation group</i> | <i>Hybrid group</i>               | <i>Unattractive combination group</i>            | <i>Pure cost leadership group</i> | <i>Pure differentiation group</i> | <i>Hybrid group</i> | <i>Unattractive combination group</i> |
| Export propensity  | 0.003**                           | 0.003                             | 0.001                             | 0.008**  | 0.009***                          | 0.004                             | 0.004               | 0.005                                 |
| Export intensity   | 0.015***                          | 0.007                             | 0.002                             | 0.029***   | 0.014***                          | 0.001                             | 0.003               | 0.027**                               |

\*\*\*p < 0.001, \*\*p < 0.01, \*p < 0.05.

The effects of export propensity and export intensity on Return on Sales (ROS) were estimated by the model:

$$ROS_{it} = \alpha + \beta_1 X_{i,t} + \beta_2 FirmSize_{i,t} + \beta_3 IndustryGrowth_{i,t-1} + \delta D_{s,t} + \varepsilon_{it}$$

where  $X_{i,t}$  is the firm's export propensity or export intensity and  $D_{s,t}$  is a vector of industry and year fixed effects. Correction for self-selection ( $\lambda$ ) was included in the two-stage models.

investigating the factors influencing firms' export propensity and export intensity, and their relationships with firm performance, based on 4-year longitudinal data for both domestic and foreign-invested firms. The findings suggest that only industry export orientation of the two industry factors affects firms' export behaviors, while the institutional environments, represented by free market mechanism development and intermediate institutions development indices, are strongly associated with export propensity and export intensity. Firms with realized competencies of cost leadership and differentiation are more likely to export and have high levels of export intensity for the overall sample. However, while this holds true for domestic firms, foreign firms with differentiation competencies are found to have low levels of export intensity, and only those with cost leadership competencies have higher levels of export propensity and export intensity. Similar to previous studies (Ito, 1997; Lu & Beamish, 2001), we found that export intensity has a negative effect on ROS for the overall sample.

### Contributions

Our results advance the exporting literature in several ways. First, we examine whether the institutional environment affects firms' export behaviors in emerging economies, above and beyond resource- and industry-based factors. The results confirm that the institutional environment can be regarded as a resource environment that provides firms with opportunities for conducting transactional activities (Wan, 2005). Therefore it is of critical importance to include institutional variables to investigate firm strategy and behaviors in emerging economies (Hoskisson et al., 2000; Peng et al., 2008; Wright et al., 2005). Firms in emerging economies usually seek substitutes when formal institutions are missing. Li et al. (2006) have found that the underdevelopment of market institutions stimulates entrepreneurs' politics participation to establish good relationships with government officials, which in turn can help them deal with market failures and get preferential treatments. However, the improvement of institutional environments also provides a favorable environment for export behaviors. Comparatively, domestic firms are more capable of managing the imperfection of market institutions. For foreign firms, it is even more important to handle the complexities of the institutional environment. Foreign firms may absorb the impact of

institutions through cooperation with local allies to participate in local relational systems (Child & Tse, 2001).

Second, we contribute to the literature by comparing the determinants of export behaviors between domestic private enterprises and foreign wholly owned subsidiaries in China. The different competency-export behavior relationships among foreign firms may be due to the variations in their motivation in making foreign direct investment in China. Foreign firms that have differentiation competencies tend to make market-seeking investment due to market failure of one kind or another (Nachum & Zaheer, 2005). By contrast, foreign firms that tend to make efficiency-seeking investment are driven by the intention to spread value-added activities geographically to take advantage of factor cost differentials among countries (Nachum & Zaheer, 2005). Through making efficiency-seeking investment, foreign firms possess cost leadership competencies to help them engage in more exporting from the host country for their downstream activities in the value chain. Foreign firms often source from local firms for inputs in assembling them into manufactured goods for exporting to their home or other foreign countries (Wan, 2005). Indeed, Luo and Park (2001) have suggested that market expansion and resource seeking are often the primary goals of foreign firms that make foreign direct investment in emerging economies such as China.

Third, we further investigate whether export behaviors can bring improved financial performance to firms, and test whether firms with different competitive competencies will gain differently from exporting activities. The results suggest that, for both domestic and foreign pure cost leadership groups, export propensity and export intensity are negatively associated with performance. As China has long been labeled as the world's factory, export products from China are usually characterized as low-cost, labor-intensive, and low-priced products. Schott (2006: 14) has found that while the export similarity between Chinese and OECD exports has been increasing, "Chinese products on average sell for a discount relative to their GDP per capita and skill abundance." According to *The Economist* (2007), firms in China assemble and test Apple's iPod for export. However, the inputs account for only \$3.70 of the total \$224 value. Because of the low-cost and low-priced approach, exporters from China may suffer from low export margins. The RMB appreciation,



rising wages, and intense competition from other low-cost countries further reduce the profit level of Chinese exporters. Therefore pure cost leadership competencies are not sufficient to compete for financial success in the export market. Indeed, Fong and Canaves (2008) have recently reported that rising costs and tighter regulations are making southern China, where many low-end export manufacturing firms are located, much less competitive. As a result, it is predicted that this year's factory closures in this region is likely to be the highest in the last two decades.

In response, the Chinese government has encouraged manufacturers to focus on higher-value goods (Fong & Canaves, 2008). Thus China's exporting structure has been moving gradually from low-end manufacturing to more advanced sectors. More Chinese exporters are investing in R&D, acquiring foreign know-how, and creating their own brand names (Tschang, 2007). According to the Ministry of Commerce, ASEAN, Russia, and India have been among China's top ten trading partners in 2006. Chinese exporters have also diversified into multiple regions of the world, and have achieved high growth in markets including Eastern Europe, Latin America, and Africa. Electronics and industrial machinery have accounted for a big proportion of the total export, especially for export to these developing countries. Some domestic exporters have become very competitive in the global market through leveraging their competitive advantages in the domestic market. For instance, Huawei Technologies, a telecom company based in Shenzhen, is a major competitor in the world's router market, and it now also supplies handsets to Vodafone. Therefore many domestic firms are combining their cost leadership and differentiation competencies to compete in the export market and achieve better performance. The significant effect of export propensity on firm performance for domestic hybrid firms (i.e., domestic firms with both cost leadership and differentiation competencies) turned insignificant after we included correction for self-selection. Nonetheless, we believe switching from pure cost leadership approaches represents the future direction of development for domestic firms in China, as many Chinese firms are in a state of transition from emphasizing low-cost strategy to building differentiation competencies. Aulakh et al. (2000) have found that export ventures from emerging economies can improve performance through using cost leadership strategy in developed economies and differentiation

strategy in developing economies. Our study did not capture the positive effect of cost leadership strategy at an aggregate level, and the lack of target country data in the database prevented us from exploring in this direction.

### Limitations and Future Directions

Our study is subject to several limitations, which also represent fertile avenues for further research in the exporting field. First, we measured firms' realized competencies based on secondary data. Therefore we could not investigate how managerial skills and organizational knowledge may help firms utilize competencies to achieve better performance. It will be interesting to examine how firms implement selected strategies in the export market. Second, a related issue is that we cannot use multi-item measures for the constructs in our study, owing to the limitation of employing secondary data. Further research could combine both secondary and primary survey data to obtain convergent and more powerful results (Tan & Peng, 2003). Third, we examined the impact of resource-, institution-, and industry-based variables on firms' export behaviors in China. Those variables are not exhaustive. Although the restriction of direct export rights has been removed, many domestic Chinese exporters still employ export intermediaries, owing to their limited expertise in the export market. Future research can further examine the impact of the capabilities of export intermediaries on firms' export behaviors (Peng & York, 2001). Similarly, we did not investigate the influence of corporate governance dimensions on export behaviors (Filatotchev et al., 2001). The dynamic and fast-changing institutional environment in China provides an excellent research context to investigate this issue. For instance, it will be worthwhile to examine how the reform and privatization of SOEs in China and the associated change in governance structure transform firms' behaviors in the export market. Fourth, it will be a very promising direction to explore the interactions of resource-, institution-, and industry-based variables and examine how they jointly shape firms' strategies and performance. Finally, the data do not contain information about target export countries of firms. Consequently, the models did not include important factors including host country institution, cultural distance, and export restrictions. Future studies in this direction can further extend our understanding of firms' export behaviors in emerging economies.



## CONCLUSION

In this study, we adopt a "strategy tripod" perspective in integrating the impact of the resource-, institution-, and industry-based factors on firms' export propensity and export intensity with performance implications. We found that the institutional environment provides strong explanatory power, above and beyond the firm- and industry-based factors, thus shedding new light on firms' export behaviors in emerging economies. We also found important differences in the export behaviors of domestic and foreign firms. While both cost leadership and differentiation competencies are positively related to export propensity and export intensity for domestic firms, foreign firms

with differentiation competencies have lower levels of export intensity. Finally, exporting does not always improve performance for firms: those firms that do not possess distinct firm competencies, and those that have only cost leadership competencies, do not obtain financial benefits from exporting.

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