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## Rushing in where angels fear to tread?: The early internationalization of indigenous Chinese firms

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## **‘Rushing in where Angels Fear to Tread?’**

The Early Internationalization of Indigenous  
Chinese Firms

Wim Naudé\*

May 2009

### **Abstract**

In this paper I empirically investigate the early international entrepreneurship of indigenous Chinese firms using data on 3,948 firms surveyed by the World Bank in 2002-03. I find important differences in the extent and motivation of early internationalization between indigenous and foreign-invested Chinese firms. Despite having started with internationalization relatively more recently than most foreign-invested firms, and despite having much less least foreign experience (only 1.3 years, on average, versus nine years) than foreign-invested firms, indigenous firms who internationalize early were found to perform better than foreign-invested firms. They may be ‘rushing in’ to international markets, but so far this seems to be paying off quite well.

Keywords: international entrepreneurship, international new ventures, exports, China

JEL classification: L26, L25, F14, F23, O53

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## Acronyms

FDI foreign direct investment

IE international entrepreneurship

INVs international new ventures

SOEs state-owned enterprises

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## 1 Introduction

In recent years, the ‘born global’ phenomenon, which refers to the early internationalization of new firms (McDougall and Oviatt 2003), has attracted increasing attention. This most often takes the form of a firm exporting or establishing a foreign presence within the first three years after its start-up. Since the early 1990s, an increasing number of firms, including small firms, are being ‘born global’. Initially, this was a challenge to the conventional theories of firm internationalization (e.g., Johanson and Vahlne 1977, 1990) that focus on the internationalization of large, multinational firms, and perceive internationalization as a complex, difficult and slow process more likely to be undertaken by the larger, established, older and more experienced firms.

Subsequent research has offered explanations for the increased early internationalization of firms. These stress the facilitating role played by the advances in information and communication technologies and globalization has played in the internationalization process. Two major strands of explanations can be distinguished for purpose of this paper. First, many young firms internationalize to escape a difficult domestic environment. Many domestic markets, for instance, are characterized by intense competition, restrictive regulations, and various industry-level obstacles, including the need to recoup R&D investments (Li 1997; Autio, Sapienza and Almeida 2000; Witt and Lewin 2007; Alon and Lerner 2008).

The second explanation for the born global phenomenon is that firms go global at a young age for strategic reasons. In particular, they want to exploit their firm capabilities and competitive advantages, or to strengthen these through the knowledge and learning that are obtainable from international markets (Oviatt and McDougall 1994; Westhead, Wright and Ucbasaran 2001). According to this view, early internationalization is largely the result of an entrepreneurial firm’s strategic intent (Autio, Sapienza and Almeida 2000). Empirical evidence, mostly from advanced economies, generally suggests that firms which internationalize early will achieve better future sales or growth performance (e.g., Autio, Sapienza and Almeida 2000; Barkema and Drogendijk 2007; Nadolska and Barkema 2007).

In this paper I revisit these explanations by empirically investigating the early internationalization of indigenous Chinese firms. China offers an interesting, but unfortunately neglected, case study of international entrepreneurship for various reasons. First, it is a country noted for its success in internationalization, as its exceptional economic growth since the late 1970s has been driven by export growth. However, this export growth has been due in most part to foreign-invested firms, with indigenous firms seemingly being less successful. This makes knowledge of the differences in early internationalization behaviour of indigenous versus foreign-invested firms potentially interesting, although research into this issue is currently almost entirely absent from the literature.

Second, until fairly recently, private indigenous firms in China had little opportunity to go global. Instead they had to survive under a difficult domestic institutional environment, facing many restrictions as well as competition from more privileged foreign-owned and state-owned firms. Before China started reforming its communist system in 1978, private enterprise was not allowed. Following the reforms, private entrepreneurship was resurgent. There are currently about 30 million private entrepreneurs providing almost 200 million jobs (Tsai 2006). By 2003, 72 per cent of

the country's industrial output came from the private sector (Dollar 2008: 5). It is therefore potentially interesting to study how these firms are now making use of greater opportunities to internationalize, and to identify the determinants of the decision to internationalize at an early stage. Here, the present study is motivated in particular by the related recent empirical evidence which suggests that a major motivation for internationalization of Chinese firms is their desire to overcome competitive disadvantages inherent in the domestic market rather than exploit their competitive advantages (Child and Rodrigues 2005; Boisot and Meyer 2008).

I empirically investigate these two related aspects of international entrepreneurship in China using data on 3,948 firms surveyed by the World Bank in 2002 and 2003. I show that there are important differences in the extent and motivation of indigenous and foreign-invested Chinese firms, and that although indigenous firms may in some sense be 'rushing in' to internationalization, the 'rushing in' phenomenon is associated with better firm performance.

The remainder of this paper proceeds as follows. Section 2 offers a brief overview of the relatively limited literature on Chinese (international) entrepreneurship, while section 3 provides a description of the extent of early internationalization in China, comparing foreign-invested and indigenous international new ventures. Section 4 discusses the regression methods and describes the variables and data used. The regression results are presented and analysed in section 5. Section 6 concludes.

## **2 International entrepreneurship in China**

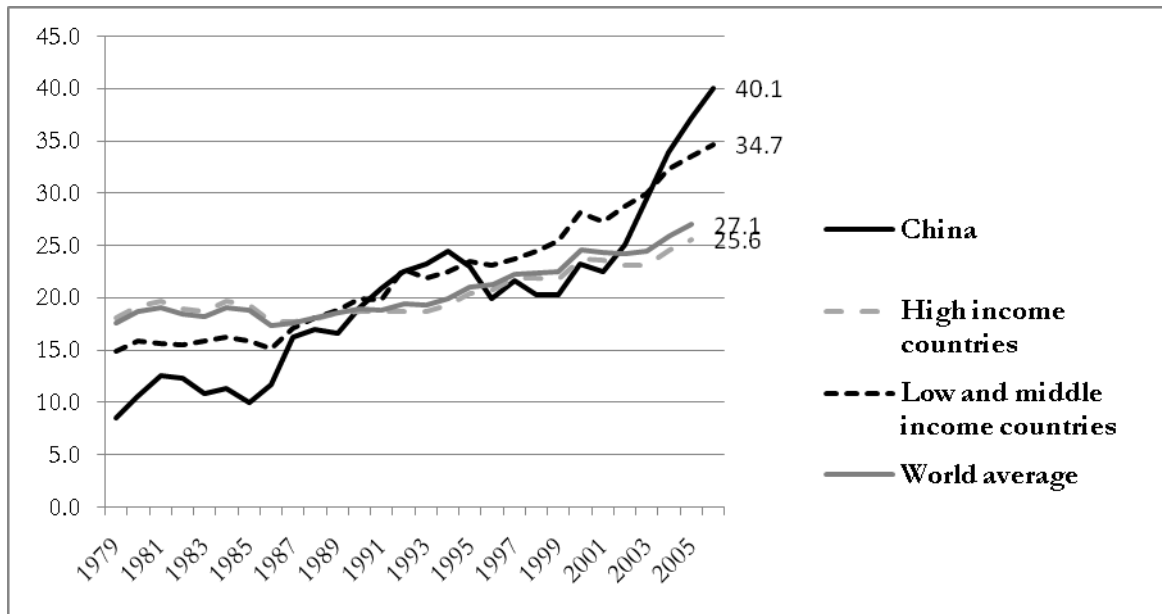
The field of international entrepreneurship (IE) is concerned with the 'discovery, enactment, evaluation, and exploitation of opportunities—across national borders—to create future goods and services' (Oviatt and McDougall 2005: 540). It aims to understand international new ventures (INVs), which are firms that internationalize early after their establishment. These firms have also been described as born-globals, infant multinationals, instant internationals and global start-ups (McDougall and Oviatt 2003: 9). The interest in INVs has been prompted by the fact that an increasing number of firms are entering foreign markets very early after establishment.<sup>1</sup> Although there is no generally accepted definition of early internationalization, it is considered to take place when a firm starts to export within three years of establishment, or establishes a foreign presence, for instance, through outward foreign direct investment (FDI) within that period (Zhou 2007: 285).

International entrepreneurship has been remarkably successful in transforming China. There is now consensus that the country's high economic growth has been driven by its export success (Park et al. 2008). Figure 1 shows the growth of exports from China from 1979 to 2006, as reflected in the share of exports in the country's GDP.

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<sup>1</sup> This goes against much of the perceived wisdom in international business studies such as that of the Uppsala process model of international trade which posits that firms go through various 'stages' in their internationalization process, and that older, larger firms would be more likely to internationalize than young, small firms, because they would have more resources and more experience (see, e.g., Johanson and Vahlne 1977, 1990).

Figure 1  
Exports from China in comparison, 1979-2006



Source: World Bank (2008).

As shown in Figure 1, by 2006 the share of exports in China's GDP exceeded 40 per cent, substantially more than the world average of 27 per cent. By 2005 China was the world's 3rd largest exporter after Germany and the United States (Child and Rodrigues 2005: 381). It is noteworthy that the share of exports in China's economy in 1979 started out at substantially below the world average or even the averages for low- and middle-income countries and much lower than that of high-income countries. Around 1990 China overtook the averages of these other country groups, and since acceding to the World Trade Organization (WTO) in 2001, has experienced a significant acceleration in the share of exports in its economy. Indeed, between 2001 and 2006 exports from China grew on average by 23 per cent per annum.

What were the reasons for this flourish of international entrepreneurship? Traditional macroeconomic explanations focus on China's large domestic market, its competitive exchange rate, large labour supply, low wages, and institutional encouragement for export-led growth (Adams, Gangnes and Shachmurove 2006: 120). The latter was given impetus by the country's 'open door' policies after 1978 (Buckley et al. 2007; Dollar 2008).

FDI has played a very significant role in China's export growth. Today China is the world's foremost destination for FDI, with FDI inflows exceeding US\$50 billion per annum. A significant amount of Chinese exports are not by indigenous or wholly-owned Chinese enterprises. Indeed, the majority of export-oriented Chinese firms have foreign shareholding, i.e., are foreign-invested firms. Thus, according to Finkle and Thomas (2008: 970), 'the "made in China" label obscures an important point: indigenous Chinese companies make few of these products'. Although Finkle and Thomas may be exaggerating, it is a fact that the share of domestic content in China's exports is relatively low. Thus, Koopman, Wang and Wei (2008), using foreign trade data, find that foreign content makes up to 50 per cent of Chinese exports, and that the ratio of foreign content is especially high in high-tech sectors such as electronics.

This asks the question: Why do indigenous firms not export more? There is relatively little research on this topic, with almost no research on how and why indigenous firms differ in their export behaviour from foreign-invested firms. Existing research which focuses on indigenous firms, however, does find that indigenous firms face firm-level constraints (in their capabilities and experience) as well as constraints from a restrictive institutional environment which may not affect foreign-invested firms to the same extent. For instance, Liu, Xiao and Huang (2008), using case studies on 16 indigenous Chinese private firms, find that (i) entrepreneurs are not well educated, (ii) that size of the firm in terms of employees does not seem to matter for internationalization, and (iii) that they are not technology intensive. They use these findings to argue that indigenous Chinese entrepreneurs are ‘bounded’ by their lack of education and experience.

It may also be the case that indigenous Chinese entrepreneurs are ‘bounded’ by institutional barriers which would make it difficult for them to internationalize. According to Child and Rodrigues (2005: 388), in China the most important institutional barriers for indigenous entrepreneurs are the lack of access to capital, inadequate intellectual property rights, insufficient training and education, poor local infrastructure, fragmented and protected provincial markets, competition from foreign firms, and government interference in markets. Foreign-invested firms often do not face the same constraints, and may be exempted from many of the restrictions on indigenous firms. This explains why many indigenous firms in the past relocated to Hong Kong, and then afterwards returned to mainland China as ‘foreign’ firms.

Tang et al. (2008) argue that three main categories of constraints on international entrepreneurship of private indigenous firms in China are (i) the controlling role and dominance of the state in the economy. In the words of these authors, ‘for most entrepreneurial firms without government connections, availability of capital is one of their major challenges’ and most internationalizing firms are large state-owned enterprises (SOEs) that benefit from direct government funding; (ii) a lack of knowledge and experience in competing in a market economy, which is a constraint especially when firms want to expand into foreign markets, and (iii) the role of ‘cultural affinities’ or, more broadly, kinship networks/social capital (also described as *guanxi*). This is historically important and pervasive in China and may have helped entrepreneurs bridge some domestic institutional gaps such as insecurity over property rights and contract enforcement, but may hamper the international expansion of firms, especially in dynamic high-tech sectors.

Where indigenous firms succeed in overcoming these barriers to internationalization, they often do not experience an improvement in firm performance.<sup>2</sup> Liu, Xiao and Huang (2008) find from a sample of indigenous firms that firms who did internationalize earlier did not experience superior performance.<sup>3</sup> There is currently, to

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<sup>2</sup> There is plenty of empirical evidence elsewhere that export-oriented firms have higher productivity, and perform better in terms of overall sales and profits than non-export oriented firms (see, e.g., Van Biesebroeck 2005a; 2005b). Whether or not these effects will also hold for early internationalizing firms (who start exporting within their first three years) is less established.

<sup>3</sup> There are a number of ways to measure a firm’s performance, each which may be affected differently by its internationalization (Hsu and Boggs 2003). Also, as pointed out by Sapienza et al. (2006), factors influencing firm performance as measured by profitability, for instance, may be distinct from factors influencing firm survival.

the best of my knowledge, no study comparing the performance of early internationalizing indigenous firms in China with the performance of early internationalizing foreign-invested firms, and in section 5 I attempt to address this shortcoming.

It may, however, be noted here that there have been studies considering the performance of export-oriented firms. But these studies usually do not consider whether these firms are early or late exporters, or whether they are foreign-invested or wholly indigenous firms. The studies generally find that exporting firms in China tend to perform better. Thus, for example, Park et al. (2008) find, using panel data on 3,339 Chinese firms, that the more internationalized Chinese firms perform better, and that the impact of exports on their performance is better when they export to developed countries, which suggests a ‘learning-by doing’ benefit from exporting. In the present case, therefore, if we find that older indigenous firms, which nevertheless had initiated exports within the first three years after their start-up had superior performance than younger firms, this could be taken as evidence of a ‘learning-by-doing’ benefit from exporting. If on the one hand, age turns out not to be significant, it could very well be the case that improved firm performance by early internationalizing firms is due to a selection effect, whereby the more productive firms themselves select to enter the export markets (e.g., Arnold and Hussinger 2005). But if on the other hand, indigenous early internationalizing firms exhibit poorer performance than non-exporting firms, it could suggest that for some reason, in China it is the less productive firms themselves that select to go into exporting and/or do not obtain benefits from exporting. The latter could result, for instance, from the greater risks associated with international trade when the indigenous firm does not have the capacity or experience to manage this risk.

In this regard it is important to keep in mind that although there is some evidence that firms that internationalize early through exports will enjoy better firm performance (Zahra, Ireland and Hitt 2000; Autio, Sapienza and Almeida 2000; Barkema and Drogendijk 2007; Nadolska and Barkema 2007;) this relationship seems to be nonlinear (with an inverse U-shape). This has been ascribed to the fact that firms which are substantially internationalized also face more risks (Ruigrok and Wagner 2003). Li (2001) finds empirical evidence of an inverted U-shape relationship between firm performance and the degree of internationalization. He also finds that firms in the more open (e.g., coastal cities) regions of China benefit more from internationalization. On the other hand Zhou (2007), examining a sample of 300 small- and medium-sized firms across six Chinese regions, finds no positive association between early internationalization and firm performance.

In the following sections I use the firm-level data of 3,948 Chinese firms to determine whether internationalizing indigenous firms do indeed have significantly improved performance compared to domestic firms and foreign-invested firms.

### **3 Methodology**

#### **3.1 Hypotheses and model**

From the theoretical discussion in section 2, the following hypotheses may be derived:



*Hypothesis 1a:* The factors that determine whether or not a Chinese firm will internationalize early differs significantly between indigenous and foreign-invested firms.

*Hypothesis 1b:* The impact of having an entrepreneur/top manager with better education and experience on the timing and extent of a firm's internationalization, will differ between indigenous and foreign-invested firms.

*Hypothesis 2a:* The performance of early internationalizing indigenous firms will be poorer than that of foreign-invested early internationalizing firms and of non-exporting indigenous firms.

*Hypothesis 2b:* The performance of early internationalizing indigenous firms will improve over time as they learn by doing.

These hypotheses are tested using both descriptive statistics (section 4.1) and regression analysis (section 4.2). The latter is based on estimating a selection model in the case of hypothesis 1 using a sample selection (Heckman two-step) estimator, and will be based on estimating a linear regression model using median regression (as there are important outliers in the dataset) in the case of hypothesis 2.

The choice of using a sample selection estimator is made given the nature of the dependent variables in hypotheses 1a and 1b. Here I am concerned to estimate the determinants of the firm's choice (i) whether or not to internationalize early and (ii) conditional on this decision, how much to export. Although there is no generally accepted definition of early internationalization (Acedo and Jones 2007: 237), it has been seen as taking place when a firm exports at least 25 per cent of its sales within a short period, often taken to be three years, or establishes a foreign presence, for instance through outward FDI within that period (Zhou 2007; Zucchella, Palamara and Denicolai 2007). In this paper, early internationalization is defined as taking place when a firm enters the export markets within three years after establishment. This latter relaxation of the definition of internationalization is due to the fact that the current database does not allow me to identify the share of exports when firms first started exporting. Having defined early internationalization in this manner, it is captured in the present data by a discrete variable which will assume 1 if a firm is an early internationalizing firm, and zero otherwise.

Therefore, I start out from the perspective of a discrete-choice model wherein each firm first has to decide whether or not to export. This decision is modelled to depend ultimately on whether the additional profit from exports is expected to be positive. Given the determinants influencing the likely profitability of internationalization allows me to model the discrete dependent variable as being generated by the following process (see Roberts and Tybout 1997: 552 for a derivation):

$$\begin{aligned} X_i &= 1 \quad \text{if} \quad \alpha_{i=1}^n C_i + \beta_{i=1}^n S_i + \delta_{i=1}^n I_i + v_i \geq 0 \\ &\text{and} \\ X_i &= 0 \quad \text{otherwise} \end{aligned} \tag{1}$$

where  $X_i$  is the discrete dependent variable for early internationalization, assuming the value of 1 if positive exports have been observed within the firm's first three years, and assuming the value of zero if not.

Equation (1) contains a number of variables which influence whether internationalization will add to profits. Following the internationalization literature (e.g., Oviatt and McDougall 1994; Autio, Sapienza and Almeida 2000; Zuchella, Palamara and Denicolai 2007; Alon and Lerner 2008; Yamakawa, Peng and Deeds 2008) I take these to be respectively a firm's capabilities, resources and competencies (the vector  $C_i$ ), industry-specific determinants (the vector  $S_i$ ) and institutional determinants (the vector  $I_i$ ). I discuss how these three vectors are measured in section 3.3.

In order to judge whether indigenous international ventures are different, I split the sample into indigenous international ventures, foreign-invested international ventures, and non-exporting indigenous ventures.

Once the firm's decision whether or not to become an early internationalizing firm has been made, for those firms where the decision is positive, I estimate the determinants of the extent of exports, measured as the share of exports in total sales. This measures the degree of internationalization. Similar arguments as indicated on the right-hand side of Equation (1) are used (see Yamakawa, Peng and Deeds 2008). Because not all firms make the decision to internationalize early, the two stages of estimation cannot be done separately, and this motivates the use of a sample selection estimator, as is explained in more detail in section 3.2.

Hypotheses 2a and 2b are estimated using a median regression to estimate the following regression:

$$P_i = f(C_i, S_i, I_i, V_{1,2,3}) \quad (2)$$

where  $P_i$  is an indicator of firm performance. I use three measures of firm performance: sales growth, employment growth, and sales per employee.  $C_i$ ,  $S_i$  and  $I_i$  are as defined, and  $V$  is a dummy variable which alternatively stands for (i) whether a firm is an indigenous early internationalizing firm, (ii) an foreign-invested early internationalizing firm, or (iii) an non-exporting indigenous firm.

### 3.2 Estimators

In the case of Equation (2) I use an median estimator so as to deal with outliers in the data, and correct for robust standard errors to avoid possible problems of heteroskedasticity in the error terms.

However, in the case of Equation (1), as was indicated, due to the discrete nature of the dependent variable and the conditionality of the extent of internationalization on the decision to internationalize in the first place, a more sophisticated estimator is required. The most appropriate estimator in this case is a sample selection estimator, to be specific a Heckman two-step estimator.

The use of the Heckman two-step estimator is particularly appropriate in the present case as it corresponds to the notion that firms go through various stages in the

internationalization process. Thus, in the Heckman selection model, we can take into account the fact that there is a difference between the probability that a particular firm will export (which is termed the selection stage), and the level of exports once there is positive export operations (termed the outcome stage). The latter will correspond to later stages in the internationalization process. Firms select to export, and then decide how much to export: as they obtain more experience, they will be entering export markets in a more committed way.<sup>4</sup>

Given the process in (1) which will generate the dependent variables in our sample, the selection stage can be modelled as follows:

$$Z_i^* = Q_i \delta + \varepsilon_i \quad (3)$$

Here  $Z_i^*$  is a latent variable corresponding to the ‘desired’ level of exports, which will only be observed once a firm has decided to export, thus  $Z_i = 0$  if  $Z_i^* \leq 0$  and  $Z_i = 1$  if  $Z_i^* > 0$ . Also,  $Q_i$  is a vector containing the measurements of  $C_i$ ,  $S_i$  and  $I_i$  as discussed earlier.

Once  $Z_i$  is known, the outcome stage, which will correspond to the dependent variable being the share of exports, can be modelled as:

$$X_i^* = Q_i \beta + u_i \quad (4)$$

with  $X_i = X_i^*$  if  $Z_i = 1$  and  $X_i$  not observed if  $Z_i = 0$ .

### 3.3 Variables and data

Data on all the variables were obtained from the World Bank’s Investment Climate Survey, which covered 71 countries over 2002 and 2003. In the case of China, 3,949 firms were surveyed, of which 3,144 are indigenous firms, defined as firms with no foreign shareholders, and 752 are foreign-invested firms (53 firms did not answer the question). It must therefore be mentioned here that the analysis is limited in terms of control variables to the variables for which data have been gathered in the survey. The survey has also not been designed and carried out for the purpose of understanding international entrepreneurship. These limitations are acknowledged upfront, and future research could address surveys for gathering broader information pertaining specifically to international entrepreneurship in China.

Internationalization amongst the firms in the sample takes the form of exports. No firm in the sample has direct foreign investments, but a relatively high number of firms do

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<sup>4</sup> Outcomes are observed only for firms that selected to export. If the factors that determine the choice/selection to export or not to export differ from those that determine the volume of exports, not taking the selection into account is tantamount to having the model subject to an omitted variable bias (Heckman 1979).

Table 1  
Description of variables and data

Variable name	Description
<b>Dependent variables</b>	
International new venture	A dummy variable = 1 if the firm started to export either directly or indirectly before the end of its third year.
Export share total	The percentage share of total exports in sales.
Export share direct	The percentage share of direct exports in sales.
Sales growth	The growth in total sales over the previous year
Employment growth	The growth in total permanent employees over the past 3 years.
Sales per employee	The value of sales per employee in the current year.
<b>Firm capabilities</b>	
Age of firm	The length of time that a firm has been in business, measured as the difference between the date of the survey and the firm's start-up date
ISO certification	A dummy variable = 1 if a firm has received ISO certification.
Firm size	The size of the firm as measured by the number of employees
Prior experience	A dummy variable = 1 if the top manager had previously worked for a firm which exported
Education	A dummy variable = 1 if the top manager has a tertiary educational qualification
Foreign experience	No. of years of experience which top manager had with a foreign firm
<b>Industry-level determinants</b>	
Competitors	No. of competitors in the domestic market
High tech sector	A dummy variable which = 1 if the firm is in a high technology sector, which includes IT services, chemicals and pharmaceuticals, electronics and auto and auto components
<b>Institutional determinants</b>	
Government regulations	The % of senior management's time taken up with dealing with government regulations and red tape.
Bribes	Average % of sales spent on paying bribes

Source: Author's own calculations based on World Bank's Investment Climate Private Enterprise Survey.

export: 1,018 of the firms in the sample indicated that they exported. This is equivalent to 27 per cent of the responding firms, and may appear to be high compared to some other countries but is consistent with previous surveys of Chinese firms. For example, Girma et al. (2006), analysing data on a sample of 102,672 private firms obtained from the State Statistical Bureau of China, find that 23.1 per cent of firms reported being involved in exporting.

It is clear from section 3.2 that I am considering three types of dependent variables, namely (i) a firm's decision whether or not to export within its first three years, which is measured by a dummy variable equalling 1 if the firm has had positive exports before the end of its first three years, and 0 if not; (ii) the level of a firm's exports if it does decide to enter the export market before the end of its third year, which is measured by the percentage share of exports in its total sales, and (iii) the extent of a firm's performance, which will be measured alternatively by the growth in its sales over the past three years, the growth in its employment over the same period, and the current value of its total sales per employee.

In variable (ii), I also make a distinction between direct and indirect exports. Firms can export either directly or indirectly, in the latter case through linkages, for instance, to

multinational enterprises. According to Acs and Terjesen (2008), the decision of a firm to either export directly or indirectly will depend on the number of value chain activities as well as the ‘perceived ex post costs of hold up, agency and monopoly rent extraction’. When the latter is important firms may prefer to export directly.

As far as the explanatory variables are concerned, the discussion in section 3.2 indicated that I group these broadly into determinants based on (i) firm capabilities and competencies, (ii) industry-level determinants and (iii) institutional level determinants. The World Bank’s survey provides measures of each of these, and they are listed in Table 1, Together with the dependent variables.

## **4 Empirical analysis**

### **4.1 Descriptive statistics**

As mentioned, the sample consists of observations on 3,948 firms surveyed by the World Bank in 2002 and 2003. Of these 3,144 are indigenous firms and 752 are foreign-invested firms (52 firms did not respond to the question on ownership). Only 85 of the 3,144 indigenous firms indicated that they started exporting before the end of their third year (i.e., 2.7 per cent) as compared to 242 foreign-invested firms (i.e., 32 per cent). However, many more firms did not export at all. About 27 per cent of all firms surveyed indicated positive exports in the survey year, thus leaving 2,747 non-exporting firms in the sample.

Table 2 summarizes the data, making a distinction between indigenous firms, indigenous international new ventures, foreign-invested firms, foreign-invested international new ventures, and non-exporting firms. The data are organized according to these firms’ internationalization profile, performance profile, resources and competencies, and industry-level and institutional determinants.

Table 2 shows that amongst the exporting firms, indigenous firms generally have the lowest export share. For the sample of all indigenous firms, the average share of sales exported is 8.4 per cent in the case of all exports and only 3.8 in the case of direct exports. Indigenous firms tend to make more use of indirect channels to export as compared to foreign-invested firms. Thus in the case of early internationalizing indigenous firms, the share of direct exports in total sales is 23.8 per cent, whilst the share of total exports (which includes both direct and indirect exports) is 40.7 per cent.

Table 2 also shows that foreign-invested firms tend to have a greater proportion of exports than indigenous firms. Thus, foreign-invested firms export, on average, about 36.5 per cent of sales, about four times more than the average indigenous firm. Similarly, foreign-invested firms are much more active in direct exports than indigenous firms. This could reflect the possibility that more skills and experience are needed for direct exporting. It could also, however, reflect the fact that foreign firms experience more local ‘agency and monopoly extraction’ than indigenous firms (see Acs and Terjesen 2008). In section 4.2 I find some corroborating evidence for this in that the extent of foreign-invested firms’ exports are negatively affected by having to pay bribes, which is not the case for indigenous firms.

Table 2  
Summary statistics

Variable	Indigenous		Foreign-invested		Non-exporters
	Firms	INVs	Firms	INVs	
Internationalization					
Number	3,144	85	752	242	2,747
Number of exporters	555	85	446	242	0
Export share total, %	8.4	40.7	36.5	61.1	0
Export share direct, %	3.8	23.8	30.5	51.2	0
Performance profile					
Sales growth, %	86.2	218	136	123	105
Employment growth, %	36.1	115	41.2	54.5	29.1
Sales per employee	283	226	822	946	307
Firm resources & competency profile					
Age of firm, yrs	17 yrs	7 yrs	9 yrs	9 yrs	16 yrs
ISO certification, %	32	43	52	56	30
Firm size	488	607	513	618	418
Prior experience, %	15	59	51	74	6.7
Education, %	82	84	92	92	83
Foreign experience, yrs	1.3 yrs	1.3 yrs	7 yrs	9 yrs	1.7 yrs
Industry-level profile					
Competitors	188	87	159	127	217
High tech sector, %	48	56	63	64	48
Institutional profile					
Government regulations, %	20.2	12	18	12	20
Bribes, %	2.0	1.1	1.6	1.5	2.12

Source: Author's own calculations based on World Bank's Investment Climate Private Enterprise Survey.

With regard to internationalization profile, Table 2 shows that the highest percentages of exports in sales are with early internationalizing foreign-invested firms. According to the firms' performance profile, sales growth over the three previous years was generally high for all categories of firms, and ranged between 86.2 per cent in the case of indigenous firms, to 218 per cent in the case of indigenous international new ventures. We can also see that in terms of employment growth, indigenous international new ventures also performed the best, with average growth in employment of 115 per cent over the previous three years. On the face of it, these results would seem to suggest initial rejection of hypothesis 2a.

Whereas indigenous international new ventures exhibit the best performance in terms of sales and employment growth, their productivity, as measured by the current sales per employee, is the lowest at 226 local currency units. In contrast, foreign-invested international new ventures, which had the second highest employment growth, had the highest productivity. International new ventures consistently outperformed non-exporters.

If Table 2 is any guide to understanding some of the reasons for these performance differences, it tends to suggest that indigenous international new ventures tend to be younger firms (on average 7 years old), with their entrepreneurs having the least amount foreign experience (on average only 1.3 years, compared to the nine years for foreign-invested firms). Also, indigenous INVs tend to have fewer competitors in the domestic

market, spend the least amount of time on government regulations, and pay the smallest percentage of their sales as bribes.

On a less encouraging note, indigenous INVs tend to have fewer educated entrepreneurs/managers than foreign-invested firms, and fewer indigenous INVs have ISO certification.

## 4.2 Regression results

### *Early internationalization behaviour*

I first present the Heckman two-step regression results for the firms' decision to export (selection model) and the extent of exports (outcome model). I use the total sample and estimate the selection model in Equation (4) alternatively using a dummy variable for indigenous INVs and for foreign-invested INVs. The results are given in Table 3.

Table 3  
Heckman two-step regression results  
(dependent variables decision to export and export share)

Variable	Indigenous firms				Foreign-invested firms			
	Total exports		Direct exports		Total exports		Direct exports	
Outcome model								
Age of firm	<b>3.16</b>	(2.13)**	<b>5.31</b>	(2.80)**	0.04	(0.02)	1.01	(0.63)
Firm size	-0.01	(-1.15)	0.01	(-0.97)	-0.01	(-0.57)	-0.01	(-1.10)
Prior experience	<b>44.18</b>	(3.13)**	<b>42.87</b>	(2.40)**	-13.65	(-0.85)	-10.76	(-0.66)
Foreign experience	-1.07	(-0.53)	-1.40	(-0.55)	1.32	(0.76)	2.14	(1.20)
High tech sector	0.25	(0.02)	6.40	(0.45)	15.99	(1.41)	<b>33.85</b>	(2.95)***
Competitors	<b>0.32</b>	(3.02)**	-0.08	(-0.62)	0.02	(1.18)	0.02	(1.06)
Government regulations	1.35	(1.02)	0.93	(0.55)	<b>0.90</b>	(1.85)**	0.57	(1.16)
Bribes	6.07	(0.95)	1.83	(0.22)	<b>-1.42</b>	(-1.86)**	<b>-1.37</b>	(-1.81)**
Constant	-55.21	(-0.91)	-67.3	(-0.88)	41.92	(0.51)	-8.07	(-0.10)
Selection model								
Firm size	-0.00	(-0.86)			-0.00	(-0.72)		
Prior experience	0.15	(0.61)			0.23	(1.10)		
Foreign experience	<b>-0.04</b>	(-1.95)**			<b>0.05</b>	(3.28)***		
ISO certification	-0.36	(-1.47)			-0.22	(-1.10)		
High tech sector	-0.06	(-0.25)			-0.03	(-0.14)		
Competitors	-0.00	(-1.30)			-0.00	(-0.28)		
Government regulations	<b>-0.03</b>	(-1.86)*			0.00	(0.04)		
Constant	-0.58	(-1.96)**			0.84	(-3.46)***		
Diagnostics								
No. of obs	251		251		214		214	
Censored obs	228		228		163		163	
Uncensored obs	23		23		51		51	
Wald $\chi^2$ (14)	47.70***		25.38**		26.73**		31.01**	
$\rho$	0.71		0.67		-0.02		0.36	

Notes: z-ratios in parentheses. \*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% levels, respectively.

Source: Author's calculations.

In Table 3, the regressors (described in Table 1) are listed in column 1. The upper section of the table presents the results of the outcome model (where the dependent variable is alternatively the share of total exports and direct exports in sales) and the lower section the results of the selection model (where the dependent variable is a discrete variable taking the value of 1 if a firm is an international new venture).

The results distinguish between indigenous INVs and foreign-invested INVs. In the Heckman two-step estimator, the results of the outcome model is conditional on the results of the selection model. This is an appropriate assumption to make (i.e., sample selection correction is necessary) if  $\rho \neq 0$ , which, as can be seen in the diagnostic results contained in the bottom section of Table 3, is indeed the case in almost all of the regressions. The diagnostic results also indicate that all of the regressions are statistically significant.

Virtually the same regressors appear in both the selection and outcome models. There are however, three differences to note. First, the age of the firm does not enter into the selection model, as the interest here is in young firms, i.e., firms deciding whether or not to internationalize before the end of their third year. However, at the time of the survey, some of the INVs had been exporting for a number of years. Therefore, the age of the firm is included in the outcome model, so as to determine whether firms become more proficient at internationalizing as they gain more experience (learning by doing). Second, the ISO certification appears only in the selection model, and bribes only in the outcomes model. These exclusions are for identification consideration, given that better estimation of the sample selection model requires that at least one regressor in the selection model be excluded from the outcome model (for a discussion, see Cameron and Trivedi 2005: 551). The choice can be defended, given that ISO certification may intuitively be argued to be more applicable as an entry barrier rather than as a barrier to the extent of exports, and that bribes may be a function of the volume of exports rather than the decision whether or not to export in the first place.

Columns 2 and 3 of Table 3 give the regression results for the case of indigenous firms' decision and extent of going global early. The selection model shows that only two variables are significant determinants of an indigenous firm's decision to internationalize early: the degree of foreign experience (i.e., the number of years of experience which the top manager/entrepreneur had with a foreign firm) and the time needed by the top manager/entrepreneur to spend on government regulations. Both of these have a negative impact on the internationalization decision. In the case of government regulations, the negative impact is as expected: the more entrepreneurs face government bureaucracy, the higher the firm's transaction costs. In the case of foreign experience, however, the negative impact is somewhat of a surprise. More years of experience with a foreign firm contribute to the capabilities of the indigenous firm. In the international entrepreneurship literature this would be considered as a facilitating and even motivating factor in a firm's decision to go global early. But as the present results show, improved understanding of the situation of foreign firms, which are generally more internationalized, may have a sobering effect. It may teach the entrepreneur that internationalization is indeed a complex, risky process, and that although internationalized firms may expect higher sales growth, this might involve a trade-off with the chances of firm survival (see e.g., Sapienza et al. 2006).

In contrast to indigenous firms, column 4 of Table 3 shows that in the case of foreign-invested firms, only the degree of foreign experience is a significant determinant of the



decision to enter international markets at an early stage, and has a positive effect. Thus the fact that a Chinese firm has foreign shareholding appears to reduce the risks of internationalization sufficiently so that the greater the foreign experience of the top manager/entrepreneur, the more likely it is that the firm will go global within its first three years.

As for the extent of internationalization as measured by the share of exports in total sales, the outcome model results in Table 3 also show that there are marked differences between indigenous and foreign-invested firms, confirming hypothesis 1a.

For one, the export share of indigenous INVs increases over time as these firms age, in contrast to foreign-invested firms where firm age is not significant. This provides part confirmation of the hypotheses (2b) that the performance (here at least in terms of extent of exports) will increase over time as firms learn by doing.

Two, prior experience in an exporting firm seems to very important as a determinant of the extent of exports in the case of indigenous firms, but not for foreign-invested firms. Of all the significant determinants of the export share of indigenous INVs, it has the largest impact by far. This reflects the importance of knowledge, skills and experience in the export process, which, in the case of indigenous firms, cannot be obtained through their foreign investors, so they need to get it from the competency of their entrepreneurs/top managers. This confirms hypothesis 1b.

Three, in the case of indigenous INVs' total exports (direct and indirect), the domestic competitive pressure they face seems to be a significant motivating factor in exporting more. As this is not the case for direct exports, the implication is that more domestic competition motivates indigenous firms to engage relatively more in indirect exporting.

Four, foreign-invested firms seem to be more significantly affected by the institutional environment in China than indigenous firms. Column 4 of the outcome model shows that they spend more time on government regulations as their exports increase (especially indirect exports), and that an increase in bribes has a significant and negative impact on both their direct and indirect exports (these findings may offer some tentative support for the thesis of Acs and Terjesen 2008).

Finally, while being in a high-tech industry (see definition of high-tech in Table 1) does not have any significant effect on a firm's decision to enter export markets nor any effect on indigenous INVs, it is a highly significant determinant of the extent of foreign-invested firms' direct exports. This may reflect the fact that many foreign firms invest in China in order to manufacture and export high-tech goods. Puga and Trefler (2008) report that foreign firms are attracted by the ability of Chinese firms to provide incremental innovation to their products and production methods.

### *Firm performance*

The median regression results on the determinants of firm performance are presented in Tables 4 to 6. Table 4 gives the results on the determinants of employment, Table 5 on the determinants of sales growth, and Table 6 on the determinants of productivity (sales per employee).

As Table 4 shows, being an international new venture (INVs) is associated with statistically significant higher employment growth. This is more so in the case of the indigenous firms that internationalize early when controlling for other factors, than in the case of foreign-invested firms. The table also shows that in both cases, foreign experience of the entrepreneur/manager has a positive and significant impact on employment growth in the firm.

Table 4  
Median regression results for the determinants of employment growth

Variable	Indigenous firms				Foreign-invested firms			
	Basic		With controls		Basic		With controls	
Constant	2.86	(1.45)**	-4.61	(10.6)	0.00	(2.70)***	4.52	(10.5)
INV (dummy)	<b>14.82</b>	(3.63)***	<b>52.37</b>	(8.6)***	<b>12.21</b>	(4.00)***	-0.22	(7.29)
Controls								
Age of firm			<b>-0.03</b>	(0.00)***			-0.00	(0.01)
Firm size			-0.00	(0.00)			-0.01	(0.04)
Prior experience			8.64	(6.55)			6.60	(6.89)
Foreign experience			<b>3.84</b>	(0.55)***			<b>3.76</b>	(0.58)***
Education			-6.76	(9.86)			-6.52	(9.71)
High-tech sector			0.10	(6.42)			-3.85	(6.68)
Competitors			-0.00	(0.00)			-0.00	(0.00)
Government regulations			0.18	(0.28)			0.01	(0.27)
Bribes			0.07	(0.22)			-0.02	(0.24)
Diagnostics								
Pseudo R <sup>2</sup>	0.004		0.07				0.05	
Number of obs	498		154				155	

Notes: z-ratios in parentheses. \*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% levels, respectively.

Source: Author's calculations.

Table 5  
Median regression results for the determinants of sales growth

Variable	Indigenous firms				Foreign-invested firms			
	Basic		With controls		Basic		With controls	
Constant	0.25	(0.04)***	0.54	(0.27)**	0.16	(0.05)***	0.53	(0.23)**
INV (dummy)	0.09	(0.11)	<b>0.55</b>	(0.22)**	<b>0.21</b>	(0.07)***	0.02	(0.16)
Controls								
Age of firm			<b>-0.00</b>	(0.00)***			<b>-0.00</b>	(0.00)***
Firm size			-0.00	(0.00)			<b>-0.00</b>	(0.00)*
Prior experience			-0.04	(0.17)			-0.04	(0.15)
Foreign experience			-0.01	(0.01)			-0.01	(0.01)
Education			-0.07	(0.25)			-0.04	(0.21)
High-tech sector			0.05	(0.16)			0.05	(0.14)
Competitors			<b>-0.00</b>	(0.00)*			<b>-0.00</b>	(0.00)**
Government regulations			-0.00	(0.01)			-0.00	(0.01)
Bribes			<b>-0.02</b>	(0.00)**			<b>-0.02</b>	(0.01)***
Diagnostics								
Pseudo R <sup>2</sup>	0.00		0.02				0.02	
Number of obs	478		148				149	

Notes: z-ratios in parentheses. \*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% levels, respectively.

Source: Author's calculations.

Table 6  
Median regression results for the determinants of productivity

Variable	Indigenous firms		Foreign-invested firms	
	Basic	With controls	Basic	With controls
Constant	151.74 (11.21)***	80.17 (31.10)**	94.35 (11.81)***	99.26 (27.5)***
INV (dummy)	<b>-67.66</b> (31.1)**	-18.8 (26.3)	<b>96.10</b> (17.37)***	<b>116.5</b> (19.6)***
Controls				
Age of firm		-0.03 (0.02)		<b>-0.04</b> (0.01)***
Firm size		<b>-0.02</b> (0.01)**		-0.01 (0.01)
Prior experience		10.31 (19.23)		-27.7 (17.8)
Foreign experience		<b>6.13</b> (1.35)***		0.93 (1.09)
Education		0.19 (29.2)		-23.5 (25.8)
High-tech sector		0.71 (18.6)		-4.50 (16.7)
Competitors		-0.01 (0.01)		-0.01 (0.00)
Government regulations		1.1 (0.81)		1.05 (0.73)
Bribes		<b>2.93</b> (0.71)***		1.00 (0.69)
Diagnostics				
Pseudo R <sup>2</sup>	0.003	0.01	0.01	0.01
Number of obs.	477	148	478	149

Notes: z-ratios in parentheses. \*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% levels, respectively.

Source: Author's calculations.

Given that one controls for other possible determinants of sales growth, Table 5 shows that—as in the case of employment growth—indigenous firms will experience higher sales growth when they internationalize early. Older firms and firms facing more competitors will have slower sales growth, although the size of these impacts are very small.

Finally, Table 6 shows the determinants of productivity. It shows, as did Table 2, that in contrast to sales and employment growth performance, indigenous firms are significantly less productive than foreign-invested firms. Being an INV in the case of foreign-invested firms is associated with significantly higher productivity, while in the case of indigenous firms, it is associated with significantly less productivity. Indigenous firms where the entrepreneur/manager has foreign experience are more productive, and larger indigenous firms are less productive. In the case of foreign-invested firms, older firms tend to be less productive than younger firms.

## 5 Concluding remarks

In the title of this paper, I posed the question: ‘rushing in where angels fear to tread?’ in relation to the motivation of indigenous firms to go global at an early age. This was prompted by earlier research, which had suggested that indigenous firms may be going global either to escape restrictive domestic circumstances, or because they were copying the behaviour of foreign-invested firms. In either case the implication is that indigenous Chinese INVs may be going global at too early an age—‘rushing in’—and that were they to have had more experience and knowledge of foreign markets, or faced better

domestic conditions, they may have postponed internationalization, which is, after all, a costly and risky process.

In this paper I presented empirical evidence which suggests that the ‘rushing in’ hypothesis may not be entirely accurate, although not completely devoid of an element of truth. The latter is evident in the finding that the degree of foreign experience (i.e., the number of years of experience which the top manager/entrepreneur had with a foreign firm) has a negative impact on the internationalization decision. This implies that an improved understanding of the situation of foreign firms, which are generally more internationalized, may have a sobering effect on indigenous firms. It may teach the entrepreneur that internationalization is, indeed, a complex, risky process, and that although internationalized firms may expect higher sales growth, this might involve a tradeoff with the chances of firm survival.

In line with the above, indigenous international new ventures were generally found to be more recent to internationalization (at the time of the survey, the indigenous INVs were, on average, seven years old), with their entrepreneurs having the least amount of foreign experience (on average only 1.3 years versus the nine years of foreign-invested firms).

What makes the ‘rushing in’ hypothesis perhaps a bit less compelling, is the fact, that despite being more recent to internationalization and having less experience of foreign markets and exporting, indigenous firms who internationalize early tend to perform rather well. To be precise, indigenous Chinese firms were found to achieve higher sales and employment growth than foreign-invested firms when they internationalize early, even though their productivity is lower, given that one controls for other possible determinants of sales and employment growth. This finding suggests that indigenous Chinese firms, after years of being restricted to the domestic market, are now successfully exploring profitable opportunities abroad.

What could account for this relatively superior performance of early internationalizing indigenous Chinese firms? A complete answer to this question remains an interesting topic for future research, although from the existing results, one explanation in particular stand out. This is the potential ability of indigenous Chinese firms to better navigate the domestic institutional environment. Thus it was noted in the analysis here that indigenous INVs have fewer competitors in the domestic market, they are less burdened by government regulations, and they pay less bribes.

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