

Financial Performance and Characteristics: A Comparison of Born Global and Gradual Internationalization Firms in China

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Abstract

This study examines the financial performance and characteristics of born global firms (BGs) in China. While the literature on BGs is growing, few systematic studies have investigated their financial performance, especially for BGs from developing economies like China. This study compares the financial ratios and rates of BGs with those of gradual internationalization firms (GIs) using analysis of variance and data on 1,069 listed companies in China's manufacturing industry. The results show that BGs are inferior to GIs in profitability, debt paying ability, growth potential, and asset quality but are similar to GIs in terms of asset management capabilities. Born global firms' ROA, operating profit margin ratio, gross profit margin ratio, current ratio, quick ratio, P/BV, Tobin's q, and growth ratios are lower than those of GIs; their debt ratio is higher than that of GIs, but their operating activity ratios are not statistically significantly different. The study also finds that ownership and size differences exert significantly impacts on the financial performance of BGs.

Keywords: born global firm, organizational performance, financial ratio, China

1. Introduction

According to Knight and Cavusgil (2004), born global firms (BGs) are innovative enterprises that start selling products to multiple countries at or shortly after their founding to achieve superior international performance via the application of knowledge-based resources. Relative to traditional large multinational enterprises (MNEs) which adopt a gradual mode of expansion from domestic to international markets to avoid risk, BGs are smaller in scale, younger in age, and faster in speed when they start penetrating foreign markets (Knight & Liesch, 2016). Born global firms achieve quick international revenue through their distinctive knowledge resources, niche product strategies, and international business networks. In the internationalization literature, terms such as "international new ventures" (Oviatt & McDougall, 1994; Gerschewski & Xiao, 2015; Mudambi & Zahra, 2007) and "global start-ups" (Oviatt, McDougall, & Loper, 1995) are also used to describe enterprises similar to BGs (Knight & Cavusgil, 2005).

In recent decades, the worldwide prevalence of BGs (Knight, 2015) has attracted a great deal of attention from international business researchers, and the volume of the BG literature has increased (Servantie, Cabrol, Guieu, & Boissin, 2016). Some studies have analyzed the triggers and determinants of early BG internationalization from multiple dimensions (MacDougall & Oviatt, 2000; Chen, Hu, & Zhao, 2009; Jones, Coviello, & Tang, 2011; Su & Cao, 2013). Other studies have investigated the factors affecting BG performance, such as strategic orientation (Sigmund, Semrau, & Wegner, 2015; Martin, Javalgi, & Cavusgil, 2016; Ma, Song, & Guo, 2016; Yang, Zhang, & Ji, 2017), innovation ability (Gerschewski, Rose, & Lindsay, 2015; Zheng, 2019), and network development (Andersson, Evers, & Gliga, 2018; Zhou, Wu, & Luo, 2007; Zhang, Tansuhaj, & McCullough, 2009; Liu, 2017). However, relatively few studies have attempted a systematic evaluation of the financial performance of BGs.

Despite the growing research interest in BGs, most studies focus on BGs in developed economies. Fewer studies focus on BG firms born in developing economies like China. China's economic environment was relatively closed and its export trade was restricted before the 1980s. Due to China's reform and opening up strategy, the

nation's system of foreign trade was transformed from that of planned management to a market mechanism. China's 2001 accession to the WTO facilitated the integration of its economy with the global economy. Government encouragement and support allowed many small and medium-sized firms to launch international entrepreneurial activities. Meanwhile, some industrial clusters in southeast coastal areas achieved rapid development due to their strong geographical advantages. China's BGs increased gradually in this environment (Ding & Yan, 2015). This study analyzes the financial and stock market performance of BGs using data on Chinese listed companies, providing useful new insights to the literature that deepen our understanding of Chinese BGs.

This study consists of two segments. First, the financial and stock market ratios of BGs are compared with those of gradual internationalization companies. Second, the influence of ownership and asset size on the two types of internationalization firm is evaluated. The next section briefly reviews theories of internationalization and research findings on BGs. The third section describes the study's data and research methods. The fourth section presents the results, and the final section provides a summary and conclusion.

2. A Review of Theories of Internationalization

2.1 Traditional Internationalization Theory

The internationalization strategy research generally agrees that internationalization is a gradual process. A new venture develops from a domestic firm to a multinational enterprise step by step, proceeding through a series of progressive international business activities from export to foreign direct investment, by constantly improving their competitiveness and engaging in international competition. The most representative model of gradual internationalization is the Uppsala model proposed by Swedish economists Johanson and Vahlne (1977). It posits that a firm needs to accumulate certain kinds of experience and ability to deal with the risky international market and that internationalization is a slow, gradual, and phased process in which the firm expands from the domestic market to the international market. Countries with a close "psychological distance" (such as geographically adjacent and culturally similar countries) are typically selected first for export, and more distant countries are incorporated later (Johanson & Wiedersheim-Paul, 1975). Many of the enterprises that adopt this mode of internationalization develop from large and mature domestic enterprises (Oviatt, 1994).

However, the international business environment has undergone significant changes since the 1980s. Economic globalization, the rapid improvement of information and communication technology, and the lowering of international trade barriers have made cross-border trade easier (Knight, 2005; Andersson et al., 2018). Some of the small and medium-sized enterprises (SMEs) that started transnational business activities shortly after their establishment first appeared in developed economies (Oviatt et al., 1995). Their internationalization mode is completely different from the conventional pattern of large MNEs (Gabrielsson, Kirpalani, Dimitratos, Solberg, & Zucchella, 2008). From their inception, they make profits in multiple countries using their unique knowledge resources (Knight & Cavusgil, 1996). Traditional internationalization theories premised on a gradual expansion from domestic to international markets cannot fully explain the activities of these new types of enterprises in the current global market.

2.2 Prior Findings on BGs

In an important finding about BGs, research has revealed that these rapidly internationalized start-ups achieve their international market goals by controlling intangible knowledge capabilities (Knight & Cavusgil, 2004). Oviatt and McDougall (1994) argue that the valuable, rare, and irreplaceable intangible knowledge resources owned by BGs are difficult for competitors to copy, which is an important factor in achieving sustainable competitive advantage and excellent performance. Born global firms are knowledge-intensive organizations, typically selling innovative and technology-based products to global markets from or near their inception (McDougall & Oviatt, 2000; Knight & Cavusgil, 2005). These characteristics enable many young and small BGs to achieve initial growth by focusing on differentiated and global niche market strategies (Braunerhjelm & Halldin, 2019). Ma et al. (2016) showed that the cost leadership strategy had no significant impact on the performance of BGs, while the differentiation and focus strategies had significantly positive effects on the international sales volume, sales growth rate, profit margin, and ROA of Chinese BGs.

Oviatt and McDougall (1995) claim that the founder's global vision is a key characteristic closely related to the survival and growth of BGs. The founders of BGs display a typical international entrepreneurial nature, in that they are forward-looking, opportunity-seeking, risk-taking, and innovative (Mort & Weerawardena, 2006). Traditional MNEs focus on the rational allocation and utilization of existing resources, while BGs with entrepreneurial founders overcome resource shortages by developing new knowledge resources and innovating new resource utilization methods. They supplement their resources by cultivating new networks and building

partnerships in leading markets, and proactively seek opportunities to enter new markets (Oviatt & McDougall, 1994; Weerawardena, Kirpalani, Dimitratos, Solberg, & Zucchella, 2020). Madsen and Servais (1997) revealed that the innovativeness of entrepreneurs gave birth to BGs with a stronger transnational entrepreneurial orientation. This international strategic orientation is characterized by the active pursuit of global competition, a willingness to take risks, and dynamic technological innovation. Previous studies have found a positive relationship between strategic orientation towards internationalization and BG performance (Gerschewski & Xiao, 2015; Sigmund et al., 2015; Martin, 2016; Ma et al., 2016; Zheng, 2019).

The international experience of BG managers and their ability to recognize opportunities in multiple markets are the main determinants and drivers of early internationalization (Rialp, Urbano, & Vaillant, 2005; Gerschewski et al., 2015). Examining samples comprised of domestic exporters and global start-ups, Gleason and Madura (2006) investigated BGs in the United States and found that their founders, board members, and senior executive managers had significantly more international experience than did those of other domestic exporter types. International experience helps managers to establish useful contacts in foreign markets, which allows them to obtain information on the most advanced technologies, products, and sales strategies. The business, social networking, and knowledge accumulated by entrepreneurs and technical managers in the markets where they once worked can help them overcome or reduce the barriers caused by language, culture, and business models in new foreign markets. This gives them an advantage in entering new markets and increases the success rate of their international entrepreneurship (Chetty & Campbell-Hunt, 2004; Andersson et al., 2018). The more international experience the managers have, the more likely the firm is to survive in foreign markets (Mudambi & Zahra, 2007).

Born global firms perceive the whole world as a single market from their inception and can achieve high-level operational performance in many countries quickly (Fan & Phan, 2007; Lopez, Kundu, & Ciravegna, 2009; Cavusgil & Knight, 2015). However, young firms that rush into the international market more quickly than do firms that follow the gradual internationalization mode are exposed to the associated uncertainties earlier and face more risks to their survival (Carr, Haggard, Hmieleski, & Zahra, 2010). Born global firms tend to lack international management experience when entering the global market, leading to higher operation and management costs, and ultimately lower profits. For instance, international marketing requires the establishment of new marketing networks in different cultural and business environments, which requires additional time, effort, and financial resources in the short term (Miocevic, 2016). Moreover, fast-globalizing firms need to recover costs more quickly than traditional exporters do, which can force them to abandon their international strategy and withdraw from the international market more frequently than their traditional counterparts (Braunerhjelm & Halldin, 2019). Sui and Baum (2014) find that the internationalization strategy does not bring rapid growth in productivity or profits. Moreover, BGs have no productivity advantage over companies that pursue gradual internationalization, and the odds of their export market survival are lower.

Although liabilities such as foreignness and newness reduce BGs' chances of survival in the international market (Mudambi & Zahra, 2007; Casillas, Barbero, & Sapienza, 2015), the literature provides evidence that BGs have strengths that generate competitive advantages against firms that take an incremental approach to international sales (Oviatt & McDougall, 1994; Autio, Sapienza, & Almeida, 2000). Kim, Lee and Kang (2020) find in their study on Korean KOSDAQ-listed manufacturing companies that BGs display greater growth potential and asset utilization efficiency than non-BGs do. Autio et al. (2000) analyzed how age, knowledge intensity, and technology imitation ability influenced the international growth of 57 Finnish international enterprises, finding that international growth was faster for enterprises that participated in international competition earlier. Gleason and Madura (2006) argue that the performance of BGs is influenced by specific firm characteristics, such as the experience of the managers and board directors and the management of venture capital. They also find that BGs rely more on venture capital, are more financially flexible, and can provide higher long-term returns for shareholders than their domestic counterparts. Choquette Rask, Sala and Schröder (2017) show that Danish BGs outperformed other firms with a long history of internationalization in terms of turnover level, employment, and job growth rate.

Chinese BGs are growing continuously in the current globalized environment. However, born in developing markets, these BGs have unique characteristics (Zhang & Li, 2017). Zhang and Li (2017) find that, in the early stage of their entrepreneurship, the R&D investment of Chinese BGs did not significantly improve production or operation capacity, and their innovation capacity had no significant positive impact on performance, while the industry experience of the founders was more significant than their international background in promoting the firms' financial performance. However, Song, Ma and Guo (2017) find that international entrepreneurial experience and market knowledge accumulation are the driving mechanism for BGs' implementation of an

innovation strategy, and that learning orientation has a significantly positive effect on the performance of BGs. Pan (2019) argues that proactive learning can enhance innovation practices and promote product upgrading and new product development, thus expanding new international marketing channels and improving the firm's survival and development capabilities. Studies have examined the firm characteristics and strategic orientations that influence BG performance. This study performs a systematic evaluation of financial performance by comparing BGs with counterpart firms that pursue gradual internationalization.

3. Method

3.1 Definitional Criteria for BGs

The criteria used to define BGs vary depending on the study's research purposes and contexts. In the extant literature, BGs are usually defined from two perspectives: the time interval between their founding and first international operation and their share of international sales in total sales.

Regarding the required time interval, three years from establishment to the first export business is the typical standard used in the literature (Night & Liesch, 2016), although several studies have examined BGs that began exporting within one, two, and six years of their founding (Zahra et al., 2000; Knight & Cavusgil, 2005; Gleason & Madura, 2006; Braunerhjelm & Halldin, 2019). In this study, we defined BGs as firms that started exporting within three years of their establishment. In defining BGs based on their sales volume in the international market, most scholars use the standard of at least 25% of total sales volume (Knight & Cavusgil, 2004; Gerschewski et al., 2015). However, this definition is considered mechanistic, as it ignores the contextual differences across BG firms (Gabrielsson et al., 2008). Gabrielsson et al. (2008) argue that the discrepancies in products, domestic market potential, and international market receptivity between BGs may result in widely differing absolute percentages of international sales share. Thus, the international sales share is not considered a decisive feature in this study.

3.2 Data

Most of the data used in this study come from Wind, a well-known financial database maintained in Shanghai, China. We also used data drawn from Choice, a database built by Eastmoney, a Chinese investment bank headquartered in Shanghai. Our sample firms are public companies that offer A-shares and are listed on the Shanghai and Shenzhen stock exchanges. The data samples were screened as follows. First, we selected 1,069 manufacturing companies established between 1997 and 2015 with exporting sales. Then, 112 were selected to comprise a sample of BGs that began international sales within three years of founding. The remaining 957 firms that had not begun international sales within three years of founding were selected to comprise the traditional internationalization sample.

3.3 Variables

Choosing the right financial ratio is critical for providing accurate analysis results. In previous studies on BGs, international performance has been measured by considering various performance types depending on the research objective, such as financial performance, operating performance, and knowledge and innovation performance (Stam & Elfring, 2008; Liu & Fu, 2011; Zhang, Sarker, & Sarker, 2013; Gerschewski et al., 2015; Battisti et al., 2022). Financial performance is the ultimate goal of BGs, as it is for other international enterprises. Gerschewski and Xiao (2015) found that, in contrast to new non-international ventures, financial performance is more important than non-financial indicators for new international ventures, while such ventures in the manufacturing industry tend to attach more importance to financial performance than do ventures in other industry sectors. Return on assets (ROA), profit margin, sales growth rate, debt ratio, equity ratio, asset turnover, inventory turnover, and Tobin's q have been used as the main evaluation indicators for financial performance (Zhang et al., 2009; Knight & Cavusgil, 2004; Zhou et al., 2007; Yang et al., 2017; Kim et al., 2020; Monferrer, Moliner, Irún, & Estrada, 2021; Herath, 2021). Following the literature, this study uses five groups of ratios as variables to test the financial and stock market performance of listed manufacturing companies in China. The variables are shown in Table 1.

The values of the variables are derived from the 2017 annual reports of the sample firms, with the exception of equity turnover ratios, current asset growth rates, and Tobin's q, the values of which are computed using related values taken from the reports.

Since China's reform and opening up, the country has adopted an economic system characterized by public ownership as the mainstay and multiple ownership economies developing together. However, several large state-owned and private enterprises have occupied leading positions in China's export trade for a long time. Since the 1980s, China's export trade system has undergone a series of changes, enabling more firms to

participate directly in international market competition. In particular, facing fierce competition with large domestic enterprises and foreign-invested ventures, some newly established small firms have been forced to seek a foothold in the international market (Ellis, 2011; Zhou, Barnes, & Lu, 2010). This study investigates the effects of ownership and size differences on performance by dividing the sample into two groups, one comprised of state-owned enterprises (including central government-owned and local government-owned firms), private firms, and joint ventures and a second group comprised of smaller, intermediate, and larger firms according to the median value of their asset size, as measured not by absolute definitions of firm size but by relative definitions applying separately to BGs and GIs. Table 2 presents the sample distribution by ownership and asset size.

Table 1. Financial ratios as variables

	Variable	Calculation Method
Profitability	Return on assets (ROA)	Net income/Total assets
	Return on equity (ROE)	Net income/Equity
	Operating profit margin ratio	Operating profit/Sales
	Gross profit margin ratio	Gross profit/Sales
Stability	Current ratio	Current assets/Current liabilities
	Quick ratio	(Current Assets - Inventory)/Current Liabilities)
	Debt ratio	Total Liabilities/Total Assets
	Equity ratio	Debt/Equity
Activity	Assets turnover ratio	Sales/Total assets
	Equity turnover ratio	Sales/Equity
	Inventory turnover ratio	Cost of Goods Sold/Inventory
	Accounts receivable turnover ratio	Sales/Accounts receivable
Growth	Sales growth rate	(Sales (t)-Sales (t-1))/Last year's sales
	Equity growth rate	(Owner's equity (t) - Owner's equity (t-1))/Owner's equity (t-1)
	Total assets growth rate	(Total assets(t)-total assets(t-1))/total assets(t-1)
	Current assets growth rate	(Current assets(t)-current assets(t-1))/current assets(t-1)
Stock market performance	Price earnings ratio (P/E)	Market value/net income
	Price cash flow ratio (P/CF)	Market value/(net income +depreciation)
	Price to book ratio (P/BV)	Market value/equity
	Tobin's q	(Book value of total assets - book value of equity + market value of equity)/book value of total assets

Table 2. Classification by ownership and asset size

Classifications	Code	BG	%	GI	%	Total	%
Food & beverage, textile & leather, wood processing & paper	C13-24	6	5.36	133	11.8	139	13
Chemical, rubber, & plastic	C25-29	21	18.75	219	22.88	240	22.45
Metal & nonmetallic products	C30-33	14	12.5	75	7.84	89	8.33
General & Special Equipment	C34-35	18	16.07	165	17.24	183	17.11
Automobile & transportation equipment	C36-37	12	10.71	61	6.37	73	6.83
Electrical machinery & equipment	C38	13	11.6	95	9.91	108	10.1
Computers, communications, & other electronic equipment	C39	26	23.21	174	18.18	200	18.71
Others	C40-42	2	1.79	35	3.66	37	3.46
	Total	112	100	957	100	1069	100

As Table 2 shows, among 112 BGs and 967 GIs, private firms account for 79.33%, while state-owned enterprises and joint ventures account for about 10%. Thus, the vast majority of the enterprises involved in international market competition are private firms.

We subdivide the samples into seven categories by industry according to the manufacturing classification standard of the China National Economic Industry Classification system (GB/T 4754-2017), as shown in Table 3. As table shows, knowledge-intensive and high-technology firms are prominent in the BG samples; 23.21% of the firms are in the computer or communication and other electronic equipment fields, while firms specializing in chemical, rubber, and plastic products account for 18.75% of the samples. Meanwhile, among the 1,069 sample firms, there are only 112 BGs (about 11% of the total), indicating that the number of BGs in China is relatively small.

Table 3. Classification by industry

Classification	BGs	GIs	Total	%
A. Ownership				
State-owned	25	89	114	10.66
Private	81	767	848	79.33
Joint	6	101	107	10.01
Total	112	957	1069	1.00
B. Asset size				
Larger	37	319	356	33.3
Intermediate	38	319	357	33.4
Smaller	37	319	356	33.3
Total	112	957	1069	1.00

4. Results

Analysis of variance (ANOVA) is used to test the significance of the mean differences between two or more samples. We examine differences in financial performance and characteristics between the BGs and GIs using the test of homogeneity of variances, finding that the p values were all less than 0.05. We also execute tests of normality of the relative data, finding that all the statistical requirements for conducting ANOVA are met. Using data on public manufacturing companies in China, this study performs variance analysis to compare the profitability, stability, activity, growth, and stock market ratios of a group of BGs with the values derived for a control group of GIs. Moreover, the study tests the robustness of the results by using a t-test to analyze the ratios. The results are consistent with the ANOVA test.

Table 4. Profitability

Variable	ROA		ROE		Operating profit margin ratio		Gross profit margin ratio	
	mean	F-value	mean	F-value	mean	F-value	mean	F-value
BG vs. GI		3.88**		1.60		11.55***		15.51***
BG firms	7.46		8.49		6.40		27.78	
GI firms	9.04		9.84		12.51		34.15	
Ownership (BG)	4.69	4.85***	5.33	5.43***	5.89	0.06		2.49*
State-owned							22.21	
Private	7.65		8.68		6.25		29.69	
Joint	16.50		19.21		10.49		25.23	
Ownership (GI)		3.02**		1.10		2.08		10.10***
State-owned	7.38		10.78		9.43		27.09	
Private	9.08		9.59		12.67		34.63	
Joint	10.17		10.97		14.01		36.71	
Size (BG)		0.44		0.17		0.69		6.15***
Larger	6.87		8.88		1.77		23.90	
Intermediate	6.97		7.74		8.84		24.93	
Smaller	8.57		8.88		8.52		34.59	
Size (GI)		26.32***		6.62***		18.53***		28.97***
Larger	7.35		9.42		9.17		29.23	
Intermediate	8.21		8.55		11.67		34.46	
Smaller	11.54		11.55		16.69		38.77	

Note. * p < 0.1; ** p < 0.05; *** p < 0.01.

Table 4 shows that significant differences between BGs and GIs are observed in terms of ROA, profit margin ratio, and gross profit margin ratio; the mean values of the BGs are lower than those of the GIs. This result indicates that the BGs are less profitable than the GIs. This might be because the BGs are more recently established companies that are still in the initial stage of operation, management, and market development. Their internal management ability and efficiency levels will inevitably fail to keep up with the requirements of the international market because new firms need a learning process when they begin to manage new entities (Shrader, Oviatt, & McDougall, 2000). Moreover, management costs are higher for BGs than they are for competitors that adopt gradual modes of expansion because expanding into the international market usually means higher costs. Meanwhile, productivity is also low in the initial stage (Braunerhjelm & Halldin, 2019; Sui & Baum, 2014).

As reported by Table 4, the variety of ownership causes significant differences in ROA and ROE among BGs and in ROA and gross profit margin among GIs. Moreover, for both BGs and GIs, the means of joint ventures are the highest, while state-owned enterprises' values are lowest. These results suggest that joint ventures enjoy the greatest profitability, which might be related to the special status that joint ventures have in China. Sino-foreign joint ventures have operated as a major form of foreign investment enterprise since China's reform and opening-up. They have obvious comparative advantages in the market due to the support they obtain from foreign investors in terms of capital, technology and management experience, as well as the preferential policies enacted by the Chinese government. Meanwhile, the international market networks of foreign investors also play a positive role in their export and profit growth (Zhou et al., 2007).

Table 4 also reports that asset size differences have significant impacts only on the gross profit margin ratio of BGs, but they significantly affect all of the four profit indicators of GIs. In particular, smaller firms have higher gross profit margin ratios for both BGs and GIs. This suggests that the products of smaller BGs are more competitive, as in the saying "A small boat turns easily." Smaller firms are more flexible and can respond and adapt to changes in international demand more swiftly to meet consumer preferences. Therefore, their gross profit from sales is higher.

Table 5. Stability

Variable	Current ratio		Quick ratio		Debt ratio		Equity ratio	
	mean	F-value	mean	F-value	mean	F-value	mean	F-value
BG vs. GI		4.49**		4.16**		15.81***		0.24
BG firms	2.44		1.96		41.48		1.88	
GI firms	3.08		2.52		34.56		1.75	
Ownership (BG)		0.60		0.69		5.19***		5.02***
State-owned	1.66		1.21		49.84		2.22	
Private	2.74		2.24		38.48		1.76	
Joint	1.67		1.25		47.14		1.97	
Ownership (GI)		3.01 **		3.11 **		6.51**		9.78***
State-owned	2.40		1.88		19.60		2.96	
Private	3.14		2.59		16.70		1.61	
Joint	3.16		2.57		18.93		1.74	
Size (BG)		3.40**		3.18*		22.79***		16.89***
Larger	1.44		1.13		52.15		2.27	
Intermediate	1.87		1.45		42.20		1.85	
Smaller	4.02		3.31		30.06		1.50	
Size (GI)		62.13***		55.81***		99.37***		7.24***
Larger	2.05		1.62		44.11		2.22	
Intermediate	2.87		2.33		33.07		1.60	
Smaller	4.31		3.61		26.51		1.43	

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Stability ratios are used to evaluate the ability of a company to support debt and determine whether its capital structure is reasonable and stable. As Table 5 shows, BGs and GIs differ significantly in their current ratio, quick ratio, and debt ratio; BGs have lower current and quick ratio values, and GIs have lower debt ratio values. These results suggest that BGs have lower solvency but a heavier overall debt burden than GIs, and have higher leverage ratios and face greater risks. This result supports the finding in Gleason and Madura (2006) that US BGs rely more on venture capital and take more risks than their domestic counterparts. Kim et al. (2020) also found that the profitability and financial stability of Korean BGs were lower than those of non-BGs.

Table 5 also shows that differences in ownership type cause significant differences in debt ratio and equity ratio for BGs and GIs, with state-owned enterprises having the highest value. This means that Chinese state-owned enterprises take more risks. They are willing to take on more leverage, possibly because they are backed by the government and financing is easier for them. Private enterprises, on the other hand, are more prudent, displaying the lowest leverage ratios and quickest assets, such as cash.

Size classification differentiates the four stability ratios significantly for both BGs and GIs. The values of the current and quick ratios of smaller firms are highest, and those of the larger firms are lowest. Meanwhile, the debt and equity ratio values of larger firms are highest, while those of smaller firms are lowest. This result indicates that differences in size affect BGs and GIs similarly in terms of stability; smaller firms have less debt

and stronger debt-paying ability, while larger firms are highly leveraged and less-solvent. This might be because larger firms are more capable of obtaining support from financing institutions and continue to be successful in their financing even when heavily in debt.

Table 6. Activity

Variable	Asset turnover ratio		Equity turnover ratio		Inventory turnover ratio		Accounts receivable turnover ratio	
	mean	F-value	mean	F-value	mean	F-value	mean	F-value
BG vs. GI		0.08		0.27		0.07		0.35
BG firms	0.69		1.19		4.57		5.69	
GI firms	0.70		1.11		4.47		16.44	
Ownership (BG)		8.46***		9.67***		0.94		1.69
State-owned	0.74		1.56		4.42		10.01	
Private	0.62		0.98		4.48		4.23	
Joint	1.36		2.52		6.38		7.40	
Ownership (GI)		0.51		9.53***		3.67**		0.28
State-owned	0.66		1.85		5.50		8.24	
Private	0.70		1.01		4.39		18.73	
Joint	0.73		1.20		4.10		6.26	
Size (BG)		0.47		2.40		4.11**		0.79
Larger	0.68		1.38		5.48		8.03	
Intermediate	0.74		1.30		4.84		4.16	
Smaller	0.64		0.90		3.37		4.93	
Size (GI)		0.95		7.87***		4.76***		1.88
Larger	0.71		1.42		4.99		33.47	
Intermediate	0.67		0.98		4.37		8.87	
Smaller	0.72		0.92		4.04		7.00	

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Activity ratios are used to analyze the effectiveness of a company's asset use and business operation processes. As Table 6 shows, no significant difference is observed between BGs and GIs in terms of the four activity ratios. Thus, BGs and GIs perform similarly in terms of management ability and efficiency.

Ownership makes a significant difference in the asset turnover ratio and equity turnover ratio of BGs, with the values of joint ventures being the highest, while the equity turnover ratio and inventory turnover ratio of GIs vary significantly depending on their size, with state-owned firms having the highest value. These results mean that joint BGs have high asset utilization efficiency and strong operation capacity, while state-owned GIs have greater asset management ability.

Differences in size significantly affect the inventory turnover ratios of BG and GI firms, with larger firms having the highest ratio and smaller ones having the lowest, indicating that the larger the firm size, the better the management ability and efficiency.

The ability to grow is a comprehensive reflection of a company's profitability, asset management, and solvency. The results in Table 7 show that the growth rates of equity, total assets, and current assets differ significantly across internationalization modes. The values of the four ratios are all lower for BGs than for GIs, although the difference in sales growth rates is not significant. This suggests that BGs have lower growth potential than GIs. This might be because BGs are generally smaller than GIs and lack resources, preventing them from adopting greater financial leverage and affecting their financing. Meanwhile, the heavier debt burden relative to their own economic resources also makes them less able to cope with the increasing complexity of the international market and avoid risks, resulting in low business stability and a greater possibility of failure (Sui & Baum, 2014). Table 7 also reports that ownership difference has no significant impact on any of the four growth indicators of BGs, but has significant impacts on the equity growth and total assets growth rates of GIs, with state-owned firms having the lowest value; this indicates that the growth potential of state-owned GIs is relatively low.

Table 7. Growth

Variable	Sales growth rate		Equity growth rate		Total asset growth rate		Current asset growth rate	
	mean	F-value	mean	F-value	mean	F-value	mean	F-value
BG vs. GI		0.16		10.42***		8.13***		4.05**
BG firms	29.08		21.78		20.57		0.24	
GI firms	40.10		43.75		38.77		0.48	
Ownership (BG)		0.71		0.03		1.00		0.05
State-owned	28.00		20.71		13.15		0.22	
Private	28.19		21.89		22.44		0.24	
Joint	45.63		24.68		26.28		0.27	
Ownership (GI)		0.36		4.03**		4.40**		2.14
State-owned	26.09		23.56		19.21		0.22	
Private	44.04		45.67		41.24		0.51	
Joint	22.54		46.97		37.28		0.47	
Size (BG)		0.21		0.87		0.96		3.59**
Larger	30.96		18.62		17.85		0.22	
Intermediate	30.18		28.47		26.13		0.36	
Smaller	26.08		18.07		17.59		0.14	
Size (GI)		0.42		7.68***		1.06		2.09
Larger	40.91		33.03		37.16		0.45	
Intermediate	29.21		43.38		36.00		0.40	
Smaller	50.19		54.84		43.15		0.60	

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

In an efficient financial market, firm performance is reflected in the market directly. The stock price in the capital market also reflects firm performance. Although China's market is much less efficient than the markets of developed economies, such as the US market (Yan, Ren, & Wang, 2015), Chong, Lam and Yan (2011) find that China's stock market has become more efficient since China's reform and opening-up by studying the profitability of trading strategies. Carpenter et al. (2014) state that the Chinese stock market is increasingly able to provide stock price information, which is characterized by its unusual similarity to the US market. As can be seen from Table 8, P/BV and Tobin's q differ significantly between BGs and GIs, with the values of GIs higher than those of BGs, indicating that the assets of GIs are of better quality and have better development potential than those of BGs.

As shown in Table 8, ownership difference affects the Tobin's q values of both BGs and GIs significantly. Private BGs have the best asset quality. This might be related to characteristics specific to Chinese private firms, such as low overheads and start-up costs and more reliable sales networks. Most of the start-up capital for private firms in China comes from the labor accumulation of the entrepreneurs themselves, and the internal management structure of the enterprises is also smaller. Entrepreneurs generally use a wide range of family, geographical, and social relations as a business network, enabling them to rapidly develop efficient and competitive enterprises.

Table 8. Stock market performance

Variables	P/E		P/CF		P/BV		Tobin's Q	
	mean	F-value	mean	F-value	mean	F-value	mean	F-value
BG vs. GI		2.34		0.09		4.61**		11.22***
BG firms	88.16		-10.54		3.76		2.58	
GI firms	69.72		318.35		4.43		3.20	
Ownership (BG)		0.72		0.45		1.86		2.79*
State-owned	111.38		23.20		2.95		1.96	
Private	85.00		-14.72		4.03		2.80	
Joint	9.56		-132.66		3.40		2.06	
Ownership (GI)		1.02		4.24 **		0.88		9.58***
State-owned	78.94		118.88		4.25		2.45	
Private	67.13		-74.51		4.40		3.23	
Joint	81.74		3614.07		4.82		3.59	
Size (BG)		1.31		0.33		2.28		5.47***
Larger	63.23		-3.91		3.06		1.95	
Intermediate	80.91		-41.17		4.13		2.68	
Smaller	126.00		19.29		4.12		3.19	
Size (GI)		1.84		1.40		42.41***		143.02***
Larger	62.13		1137.62		3.57		2.29	
Intermediate	68.68		-369.89		4.13		3.00	
Smaller	79.69		145.44		5.77		4.47	

Note. * p < 0.1; ** p < 0.05; *** p < 0.01.

The difference in asset size also has a significant impact on Tobin's q values for both BGs and GIs, with those of the smaller firms highest and those of the larger firms lowest, indicating that the asset quality of smaller firms is superior to that of larger firms for both BGs and GIs.

5. Summary and Conclusion

This study seeks to provide new evidence on the financial performance and characteristics of BGs in China's manufacturing sectors. The study finds that the profitability and stability of BGs founded between 1997 and 2015 are lower than those of GIs; BGs have heavier debts and lower solvency. Furthermore, BGs are inferior to their GI counterparts in terms of growth potential and asset quality. The equity growth rate, total asset growth rate, current asset growth rates, P/BV, and Tobin's q of BGs are lower than those of GIs. However, BGs and GIs perform similarly in terms of activity.

This study also found that ownership and asset size differences significantly affect BGs' financial and stock market performance. This result indicates that joint ventures have stronger profitability, while state-owned BGs have lower stability. In terms of stock market performance, BGs have the highest asset quality. Size difference has no significant influence on the profitability of BGs but significant impacts on solvency and asset quality, showing that smaller companies have the lowest debt ratio, strong debt-paying ability, and good asset quality. Larger companies have the highest debt ratio and the lowest debt-paying ability.

These results are closely related to the characteristics of BGs, which enter into the international market when their knowledge is insufficient. Relative to GIs, which own relatively large resource reserves, BGs are at a disadvantage when facing internal and external resource changes. Moreover, the systematic integration of China's economy with the world economy began only after China's accession to the WTO. The relevant institutional environment is still underdeveloped, which means that the more rapidly internationalized BGs face greater risks in the international market (Efrat & Shoham, 2012).

These results imply that Chinese BGs face greater challenges than GIs. First, while expanding international markets and establishing sales networks, it is very important for an enterprise to be able to enter new markets, which depends largely on the newly developed or established network. However, when BGs began operating, there was a serious shortage of knowledge and resources for international finance, market forecasting, geopolitics, and international human resource management, making it very difficult for them to break through existing business networks and distribution channels in a timely manner. Thus, BGs face the dual risks of new products and new markets. Moreover, new market development requires a large investment of resources, which also makes their profit and survival less certain. As a result, young BGs may face operational management problems earlier, impeding their ability to maintain a competitive advantage (Shrader et al., 2000).

However, young BGs also have strengths, such as strong technological innovation and learning ability and a high capacity to respond flexibly to the rapidly changing international market (Autio et al., 2000). These strengths are positively correlated with their performance and directly affect their sales, growth, and profitability (Zhang et al., 2009). The international market is full of changes and uncertainties. China's BGs need to stay highly alert to the external environment and constantly update and allocate assets according to the demands of the international market. China's BGs can gradually improve their competitive advantages over companies with longer internationalization histories by cultivating the ability to dynamically acquire, absorb, and develop new knowledge; continuously improving their ability to research and develop new products and explore new markets; and meeting the demands of customers in international niche markets (Zheng, 2019; Rodriguez-Serrano & Martin-Armario, 2019; Pan, 2020).

This study should help managers, investors, and academics to better understand BGs in China's manufacturing sector. However, the study has several limitations due to its research and sampling methods. First, the inherent limitation of the study's F-test analysis method means that our analysis is unable to consider the operating status and financial characteristics of the sample firms dynamically. In addition, this study is based on cross-sectional data from the financial statements of 112 BGs and 957 GIs covering 2016 and 2017. Data from financial statements are static, as they show the financial condition of an enterprise at a fixed point in time. Dynamic analysis or longitudinal data analysis that expands on this study would provide more comprehensive and convincing research conclusions. Finally, the study's samples are comprised of firms that were established between 1997 and 2015 and that had survived by 2017; those that did not survive until 2017 are excluded. Therefore, the BGs considered in this study constitute only a subset, and the research results cannot be generalized to all BGs. The survival rates of Chinese BGs and the reasons for failure among those that did not survive could be considered in future research.

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