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The Case of the Hainan International
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Abstract:

China's Hainan Island has a rich diversity of attractions and opportunities for nature-based tourism, outdoor recreation, and sporting activities. Moreover, Hainan Island has a natural and socioeconomic base and environment, hosting the implementation of a tourism industrial policy. On December 31, 2009, China's State Council announced to the world the national policy of the establishment of Hainan International Tourism Island. Hence, China's Hainan Island is well suited for investigating the announcement effects of regional tourism industrial policy on the market values of firms in a tourist destination region. Based on a sample of 19 listed firms in Hainan, or Hainan concept firms, consisting of various industries, we explore the announcement effects of the national policy of Hainan International Tourism Island using an event-study approach. Two statistical methods, mean adjusted and market-model adjusted, are employed to calculate the daily abnormal returns and the cumulative abnormal returns. The results with and without considering the clustering issue show that, first, the averages of (standardized) accumulative abnormal returns are not different from zero prior to the announcement; second, the (standardized) accumulative abnormal returns of Hainan concept stock continuously go up over trading days after the announcement of a regional tourism industrial policy. As a robustness check, we also investigate the effect of the policy on Guangdong concept listed firms. We find no significant impacts of the policy announcement on the Guangdong concept listed firms. In sum, these findings indicate that regional tourism industrial policy is valuable not only to the tourism industry in the destination region but also to other industries in that region.

JEL Classification: O25, R11

Keywords: Announcement effects, Tourism, Regional industrial policy, Tourism industrial identity, Hainan

The Announcement Effects of Regional Tourism Industrial Policy: The Case of the Hainan International Tourism Island Policy in China

1. Introduction

Government involvement in tourism in destination areas is an important research theme in tourism literature (Pastras and Bramwell, 2013). One common form of state involvement is the setting and implementation of tourism industrial policy for tourist destinations.¹ Capital markets usually respond to the announcement of a tourism industrial policy.² The response of capital markets to the policy announcement indicates existing and prospective entrepreneurs' and investors' expectations, which can influence the types and amounts of the flow of resources and the types of business activity that could thrive in that area. Hence, the response of capital markets may give us valuable information on whether regional industrial policy is able to motivate market forces to invest in the destination region. To some extent, it prefigures whether tourism industrial policy would work well.

The case of Hainan International Tourism Island is well suited for a study on the response of markets to a regional tourism policy announcement for several reasons. First, Hainan Island is surrounded by the South China Sea and is a clear and separate geographic region.³ Hence, it is

¹ Other forms include regulations, mobilizing, guidance, and so on. For the purposes of this study, regional tourism industrial policy is defined as measures and programs undertaken by governments to shape the sectoral structure of the economy by channeling resources into a selected "pillar" or "strategic" tourism industry while ideally or purportedly-preserving market competition and firm-level decision autonomy in tourist destination areas.

² The phrase "announcement effect" is most often used to describe the reactions of capital markets to news that a change will occur at some future date. An event-study approach is commonly used to investigate these effects.

³ See section 2 for an introduction to Hainan International Tourism Island.

easy to define firms in the relevant region. Second, the region has a large population and abundant natural resources such as fresh air, uncontaminated water, a pleasant climate, and a favorable inhabiting environment. The impact of the implementation of a tourism industrial policy may be sizable. Third, China, as the second largest economy in the world, is one of the fastest growing tourism markets and is also one of the leading tourist destinations (Wang and Ap, 2013).⁴ It has created a favorable macro-environment for development of the tourism industry in Hainan. Finally, the implementation of a tourism policy involves inter-organizational coordination and also requires cooperation with other government organizations (Lai et al., 2006). China is an example par excellence of a country with a top-down political system. It facilitates coordination and cooperation during the implementation of a tourism industrial policy.

The academic literature on tourism policy is broad and fragmented. Scott (2011) classifies the literature on tourism policy in terms of the definition of policy, policy-making process, implementation of tourism policy, assessment of tourism policy, and methodology for policy studies and provides a strategic and detailed view of the literature on policy in tourism up to the end of 2009.⁵ We focus on papers in primary scholarly journals from the beginning of 2010 for the sake of brevity.⁶ A strand of literature deals with the implementation of tourism policy. Krutwaysho and Bramwell (2010) investigates tourism policy implementation within its societal context including the economy, governance, politics and culture and focuses on studying the

⁴ For example, the UNWTO (2013) shows that Chinese international tourism receipts grew in double digits (25%) and that China sits in the second place among the 25 largest international tourism earners, behind only Thailand (27%). The fast growth in Chinese tourism markets benefits from higher income, improved internal infrastructure and other investments, relaxed limitations on foreign travel, tourism policies, and so on.

⁵ See Scott (2011) for a detailed review of the literature.

⁶ Ambrosie (2010) suggests that a review of the literature should be undertaken in a variety of ways in the tourism policy field because reviewing and integrating such an unconsolidated literature is a daunting task.

interactions using the case of Phuket, Thailand. With the guidance of the synthesis approach, Wang and Ap (2013) develop a conceptual framework describing the factors affecting the implementation of tourism policy and illustrate the framework with the experience of tourism policy implementation at the local level in China. Pastras and Bramwell (2013) emphasize the role of government in coordinating tourism policies among different actors, institutional arrangements, and administrative levels and explore government involvement in coordinating and steering the tourism policies involved in Athens' tourism marketing. A few studies (Bramwell, 2011; Chaperon and Bramwell, 2013), based on the governance of tourism, the new institutionalism perspective, and the strategic-relational approach, examine temporal changes in government involvement in tourism activities. Different from the preceding studies adopting descriptive research designs for policy implementation, Liu et al. (2012) present a holistic and novel hybrid MCDM (multiple criteria decision-making) method to analyze the improvement strategy that should be pursued as part of tourism policy implementation in Taiwan.

Another strand of literature is related to the assessment of tourism policy. Logar (2010) examines the potential use of policy instruments such as economic, regulatory, and institutional instruments to manage tourism more sustainably in the coastal town of Crikvenica in Croatia. Employing the Goffman's frame analysis, Wu et al. (2012) focus on the holiday system reform process in China. They explore China's unique Golden Week holiday system and the ongoing debate over its reform based on online news stories. Aware of the extraordinary performance of the Singapore tourism industry, Meng et al. (2013) develop a CGE (computable general equilibrium) model based on the Singapore input-output table, gauge the economic impact of Singapore inbound tourism and the effectiveness of Singapore tourism policies, and obtain the simulated

macroeconomic and sectoral effects. Wang and Xu (2014) find that local government involvement tends to reduce the economic effects of resource-dependent tourism firms and results in discernible overcrowding at sites and negative ecological consequences.

Using the case of the Hainan International Tourism Island Policy initiative in 2009, we explore the response of capital markets to the announcement of a regional tourism industrial policy in China. To the best of our knowledge, our study is similar to two papers in extant literature: Chen and Bin (2001) examine the announcement effects of federal and state legislation regarding casinos on the gaming industry using an event-study approach in the United States. Chen et al. (2007) apply the same approach to explore the impact of the SARS (severe acute respiratory syndrome) outbreak on hotel stocks in Taiwan. Our study is significantly different from these two in at least two crucial respects. First, we investigate the announcement effects of comprehensive tourism industry policy on the whole market instead of only exploring a single sector such as gambling, hotel, airline, or travel agency in a tourist destination region. Second, although an event-study approach is also applied in our study, we take into account the clustering issue of cross-sectional correlation in event study and introduce a new test statistic developed by Kolarik and Pynnönen (2010) to address the problem.

We focus on the market values of listed firms locating in Hainan, or Hainan concept firms. Specifically, based on an event-study approach, we utilize the daily return data of Hainan concept stocks to explore the announcement effects of industrial policy on tourism. We find that, first, Hainan concept stocks show a different pattern after the announcement of the tourism industrial policy than prior to it, and the difference is statistically significant; second, the (standardized) accumulative abnormal returns of Hainan concept stocks continuously go up over trading days

after the announcement of the regional tourism industrial policy. Hence, market participants positively respond to the announcement of a national policy. The preceding results show that the national announcement of the Hainan International Tourism Island initiative did indeed convey information useful for the valuation of Hainan concept firms; the national policy recognizes Hainan Island as a tourism industrial identity, and the value of receiving a tourism industrial identity is significant not only for tourism-related firms but also for all other firms on Hainan Island.

The rest of the paper is organized as follows: In the next section, we provide background information on Hainan Province and the evolution of the national policy of Hainan International Tourism Island. Sample selections and methodology design are outlined in section 3. Section 4 presents empirical findings and discussion. Section 5 concludes this paper.

2. Hainan Province and the National Policy of Hainan International Tourism Island

Hainan Province, founded in 1988, is the southernmost province of China. It neighbors the Philippines to the east, Malaysia and Brunei to the south, Indonesia to the southwest, and Vietnam to the west. It has an area of 35,400 square kilometers of land and 2.1 million square kilometers of marine space. It consists of Hainan Island, which is the largest island and is separated by the Qiongzhou Strait from the Leizhou Peninsula of mainland China, and some 200 scattered islands, but 33,900 square kilometers (95.8%) of its land is Hainan



Figure 1 Location of Hainan Island

Island. Hainan Province takes its name from Hainan Island. It enjoys a marine tropical moist monsoon climate. The coldest months are January and February, when the monthly average temperatures drop to around 16°C, and the hottest months are July and August, when the monthly average temperatures range from 25 to 29°C. There are 9 major cities and 10 counties in Hainan Province. Haikou, on the northern coast of Hainan Island, is the capital, and Sanya is the leading and well-known holiday resort on the southern coast. It has a population of around 8.7 million, and its population density is low compared to most Chinese coastal provinces.

Primarily known for its stunning coastline and sun-kissed, palm-lined beach, Hainan Island offers a wealth of other attractions—from waterfalls, hot springs, an extinct volcano crater, and tropical mangrove and rain forests that are home to more than 4,600 kinds of flora and fauna and over 570 wildlife species to a rich cultural heritage with three important ethnic minorities playing a significant role in its colorful history. All these attractions are in the context of Hainan's tropical climate, ideal for year-round leisure and business tourism, including meetings, conferences, and corporate-sponsored incentive trips. Few destinations around the world offer such a variety of attractions and opportunities for nature-based tourism, outdoor recreation, and sporting activities (WTTC, 2012).

China's State Council (the Cabinet in China) recognized the promising economic and social contributions of the tourism industry and chose Hainan Island as a priority area for tourism development in the national Seventh Five-Year Plan (1986–1990).⁷ Yalong Bay in Sanya was designated for the construction of national holiday resorts and the development of starred hotels, condominiums, golf courses, and so on in 1992. On December 31, 2009, China's State Council

⁷ Tourism was included in the national plan for social and economic development in China for the first time in 1986.

announced to the world the national policy of the establishment of Hainan International Tourism Island.⁸ This means that Hainan Island was earmarked to become a world-class international tourism destination on a par with world-renowned destinations such as Hawaii and Bali. The Hainan provincial government's focus on tourism development, which started in earnest around the mid-1990s, has been stepped up significantly over the past few years, particularly after the declaration of December 31, 2009. Hence, Hainan has benefited from a number of favorable policy measures aimed at facilitating and accelerating tourism development and investment. These include optimizing the destination's appeal through the granting of visa-free status for selected markets and duty-free shopping for mainland Chinese as well as foreigners.

Both Chinese and foreign airlines are vying with each other to gain traffic rights for new domestic and international services, and cruise lines are queuing up to tap the latent market demand for Hainan as a port of call or even to base their cruise ships at Sanya's Phoenix Island cruise terminal. Due to the national and provincial authorities' support in building the necessary infrastructure and in developing new tourism products and attractions, leading international hotel brands have been quick to partner with large Chinese investors and developers to establish a presence on Hainan Island and secure a slice of the expanding tourism cake. Indeed, no other tourist destination region in the world—whether province or country—has attracted such huge interest from so many different players in such a short time (WTTC, 2012).

⁸ The State Council decree detailing the development of Hainan into an international tourism destination includes the following 6 specific strategies: developing Hainan into a pilot region for China's tourism industry reform, building the island into a world-class leisure travel and holiday tourist destination, establishing a demonstration zone for China's ecological development, making Hainan an important platform for international economic cooperation and cultural exchanges, developing resources in the South China Sea, and developing the Hainan economy into a service-based as well as a modern national tropical agriculture-based economy. For additional details on the key players and institutional possesses involved in national policy-making in China's tourism sector since 1978, see Airey and Chong (2010).

In sum, the growing importance of tourism to Hainan is indisputable; significant strides in line with plans have already been made to turn Hainan into an international resort destination; and a distinctive and competitive tourism industry identity has been taking form through the national policy, a series of government efforts, tourism industry planning, investment in tourism, marketing, and promotional activities in Hainan.

3. Sample Selections and Methodology Design

3.1. Sample Selection

As of December 31, 2009, there are 24 Hainan concept firms listed on the Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) in total.⁹ First, we drop the firms issuing class B, H, and red-chip shares in order to avoid the measuring error of the renminbi (RMB) exchange rate. Second, to lower the speculative trading effects especially among small- and medium-cap stocks,¹⁰ the firms traded in second-tier and NASDAQ-style growth enterprise markets are deleted. Then 19 firms that only issue class A shares and are traded on the first-tier market (“Zhu Ban Shi Chang”) of the SHSE and SZSE are kept in our database.¹¹ As another

⁹ The Hainan concept listed firms refer to publicly traded companies listed on China’s domestic stock exchanges, which have their headquarters and make the most earnings in Hainan Province.

¹⁰ Allen et al. (2012) argue that small- and medium-cap stocks are more easily manipulated in Chinese stock markets.

¹¹ In Chinese stock markets, class A shares are designed to serve domestic investors. All shares of Chinese listed firms with non-RMB denominations are available to global investors, such as class B, H, and red-chip shares. Three other markets have been established to complement the first-tier market (“Zhu Ban Shi Chang”), a second-tier market similar to the NASDAQ (“Er Ban Shi Chang”) for small and medium enterprises (opened in 2004), a third-tier market (“San Ban Shi Chang”) for dealing with de-listing firms and other Over-The-Counter (OTC) transactions (opened in 2001), and a NASDAQ-style growth enterprise market (“Chuang Ye Ban”) for small and medium private enterprises (opened in 2009).

robustness check, we also examine Guangdong concept listed firms. The reasons the Guangdong concept is chosen are as follows: First, Hainan is the southernmost province in China. Hainan was part of Guangdong Province for centuries, and it was newly created in 1988. If there exists another unspecified event that had an impact on southern regions of China, the Guangdong concept stocks will also be the most likely to be influenced by the event. Therefore, if we find a significant impact on the Hainan concept stocks but no significant impact on the Guangdong concept stocks in terms of the announcement of the Hainan tourism policy, it is reasonably concluded that the significant impact on Hainan concept stocks is attributable to the announcement of the Hainan tourism policy. Second, as of December 31, 2009, the number of listed Guangdong concept firms was 225 and accounted for 13.10% (the largest percentage in 31 concept stocks) of the all listed firms. It is clearly evident that the Guangdong concept best represents the whole stock market's response to the policy announcement among all the 31 concept stocks in China. Following the same sample selection methods as for the Hainan concept, 127 publicly traded companies are kept in the dataset.

Table 1 and the appendix present primary financial information on Hainan and Guangdong concept stocks, respectively. As evident in Table 1, 12 of 19 Hainan concept stocks are listed on the Shenzhen Stock Exchange as of November 30, 2009. Price per share, shares outstanding, and market capitalization are figures on November 30, 2009. The maximum and minimum prices per share are 17.08 and 5.23 RMB Yuan, respectively. The outstanding shares range from a high of 3,345.19 million to a low of 99.33 million. The firm with code 600221 has the maximal market capitalization of 19,937.36 million RMB Yuan, which is 19.13 times the minimal number of 1,042.10 million RMB Yuan for a company with code 000567. The last column of industry shows that the 19 listed firms are distributed across following industries: 4 in real estate, 2 in

transportation, 2 in metallurgy, 1 in hotels, 1 in mining, 1 in farming, 1 in publishing, 1 in textiles, 1 in decoration, 1 in retail, 1 in computers and networking, 1 in automobile manufacturing, 1 in medical manufacturing, and 1 in drink manufacturing.

Table 1 Hainan Concept Stocks Listed in the Shanghai and Shenzhen Stock Exchanges

Company Code	Market Listed	Date of Being Listed	Price per Share (in RMB Yuan)	Shares Outstanding (in Millions)	Market Capitalization (in Million RMB Yuan)	Industry
000503	SZSE	Nov 30 1992	10.52	569.02	5986.06	Computer and network
000566	SZSE	May 25 1994	15.75	207.86	3273.83	Medical manufacturing
000567	SZSE	May 25 1994	8.94	116.57	1042.1	Real estate
000571	SZSE	May 25 1994	6.71	735.51	4935.24	Mining
000572	SZSE	Aug 08 1994	6.35	568.91	3612.56	Automobile manufacturing
000613	SZSE	Jan 28 1997	6.05	203.03	1228.32	Hotel
000657	SZSE	Dec 05 1996	9.03	144.05	1300.78	Metallurgy
000691	SZSE	Feb 28 1997	5.23	268.48	1404.14	Real estate
000735	SZSE	Jun 11 1997	6.1	879.89	5367.3	Farming
000793	SZSE	Jul 29 1997	6.88	1169.41	8045.51	Publishing
000886	SZSE	Jan 23 1998	5.74	941.64	5404.99	Real estate
000955	SZSE	Dec 09 1999	6.64	232.03	1540.7	Textile
600209	SHSE	Mar 25 1999	6.63	223.76	1483.55	Decoration
600221	SHSE	Nov 25 1999	5.96	3345.19	19937.36	Transportation
600238	SHSE	Jan 20 2000	15.64	155.18	2427.06	Drink manufacturing
600259	SHSE	May 25 2000	17.08	99.33	1696.56	Metallurgy
600515	SHSE	Aug 06 2002	7.9	250.19	1976.54	Retail
600759	SHSE	Oct 08 1996	7.33	204.15	1496.41	Real estate
600896	SHSE	May 03 1996	9.52	581.32	5534.13	Transportation

Note: SZSE and SHSE are short for Shenzhen and Shanghai Stock Exchanges, respectively. Price per share, shares outstanding, and market capitalization are figures on November 30, 2009. Our data are from the China Stock Market and the Accounting Research Database.

3.2. Methodology Design

We investigate the announcement effects using an event-study approach.¹² Before implementing this approach, we need to define the event date of interest and the event window, which is the period over which the stocks' prices are examined. We define the event date as December 31, 2009, when the announcement of Hainan International Tourism Island was made by the State Council of China¹³. Following the standard practice, a 15-day event window centered on the event day is also analyzed. In order to examine the announcement effects, an eight-day event window covering the announcement date and the seven days after the event day is selected. To evaluate whether information on the announcement might have been leaked to the markets prior to the announcement, a seven-day event window covering the seven days preceding the announcement is also chosen. In other words, we present empirical evidence for three different windows: $[-7, 0)$, $[0, 7]$, and $[-7, 7]$, where day 0 refers to the announcement date (i.e., December 31, 2009). The parameters of the normal performance are estimated over the estimation window. Taking into consideration that the estimation window and the event window do not overlap and that the estimation sample period is typically 120 to 250 trading days in a daily data, we specify an estimation period over the period from December 1, 2008, to November 30, 2009 (244 trading

¹² Using financial market data, an event study measures the impact of a specific event on the value of firms. Different from the direct productivity-related measures, which may require many months or even years of observation, a measure of the event's effect can be constructed using security prices observed over a relatively short time period. The event study has many applications. Some examples in accounting and finance include mergers and acquisitions, earnings announcements, issues of new debt or equity, and announcements of macroeconomic variables such as financial deficit (e.g., Spiegel and Yamori, 2004; Yamori, 1999; Yamori and Baba, 2000; Yamori and Kobayashi, 2002, 2007; Yamori and Murakami, 1999). Some examples from the field of law and economics include assessing the effects of a change in the regulatory environment on the value of a firm and evaluating the damages in legal liabilities.

¹³ The stock market opens at 9 o'clock in China, and the news release of the Hainan tourism policy occurred at 9 o'clock.

days in China).

Four statistical models are commonly used to calculate the daily abnormal returns and cumulative abnormal returns of stocks: raw, mean-adjusted, market-adjusted, and market-model-adjusted (single factor and multifactor market-adjusted) methods. For simplification and robustness, we choose the mean-adjusted and market-adjusted models.¹⁴ Specifically, we have

$$AR_{i,t} = R_{i,t} - E[R_{i,t}], \quad (1)$$

where $AR_{i,t}$ is the daily abnormal return of stock i in period t , $R_{i,t}$ is the observed daily return in raw stock price, and $E[R_{i,t}]$ is the expected return for stock i on date t . For any stock i , the expected return is defined as follows:

$$E[R_{i,t}] = \begin{cases} \bar{R}_i & \text{mean-adjusted} \\ \hat{\alpha}_i + \hat{\beta}_i R_{M,t} & \text{market-model-adjusted} \end{cases}, \quad (2)$$

where \bar{R}_i is the simple average of stock i over the 244-day estimation period. $R_{M,t}$ represents the value-weighted SHSE and SZSE market index returns on day t . The coefficients $\hat{\alpha}_i$ and $\hat{\beta}_i$ are ordinary least-squares values from the single-factor market model regression over the estimation period.

The abnormal return observations $AR_{i,t}$ must be aggregated in order to draw overall inferences for the Hainan International Tourism Island announcement effects. The aggregation is along two dimensions, through time and across stocks. Let τ denote the time index in the event window. Define $\bar{CAR}_i(\tau_1, \tau_2)$ as the sample cumulative abnormal return (CAR) from τ_1 to τ_2 . The CAR from τ_1 to τ_2 is the sum of the included abnormal returns,

¹⁴ Brown and Warner (1980, 1985) show that the mean-adjusted model performs better than other methods. Levy (2000) and Chan-Lau (2002) indicate further that the choice of model does not significantly affect the results. In addition, Campbell et al. (1997) argue that the gains from employing a multifactor market-adjusted method for event studies are limited.

$$\overline{CAR}_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} \overline{AR}_i. \quad (3)$$

As the estimation window length increases, asymptotically, the variance of \overline{CAR}_i is

$$\sigma_i^2(\tau_1, \tau_2) = (\tau_2 - \tau_1 + 1) \sigma_{\varepsilon_i}^2, \quad (4)$$

where $\sigma_{\varepsilon_i}^2$ is the variance of the stochastic disturbance term in a single-factor market model.

A usable test statistic for the null hypothesis of no impact of the event for stock i is then the standard cumulative abnormal return:

$$\overline{SCAR}_i(\tau_1, \tau_2) = \frac{\overline{CAR}_i(\tau_1, \tau_2)^{asy}}{\sigma_i(\tau_1, \tau_2)} \sim N(0,1). \quad (5)$$

Then we aggregate $\overline{CAR}_i(\tau_1, \tau_2)$ across N stocks,

$$\overline{CAR}(\tau_1, \tau_2) = \frac{1}{N} \sum_{i=1}^N \overline{CAR}_i(\tau_1, \tau_2) \quad (6)$$

$$Var(\overline{CAR}(\tau_1, \tau_2)) = \frac{1}{N^2} \sum_{i=1}^N \sigma_i^2(\tau_1, \tau_2). \quad (7)$$

In practice, the usual sample variance measure of $\sigma_{\varepsilon_i}^2$ from the single-factor market model regression in the estimation window is usually used as an estimator of $\sigma_{\varepsilon_i}^2$. Inferences about the cumulative abnormal returns can be drawn using

$$J_1 = \frac{\overline{CAR}(\tau_1, \tau_2)^{asy}}{\sqrt{Var(\overline{CAR}(\tau_1, \tau_2))}} \sim N(0,1) \quad (8)$$

to test the null hypothesis of no announcement effect of Hainan International Tourism Island (i.e., the abnormal returns are zero).

The event day (December 31, 2009) is the same for all sample companies. The clustering problem of cross-sectional correlation exists among abnormal returns. For the clustering, the simple covariances between the abnormal returns may no longer be usable. Clustering can be accommodated in two ways. One way is the application of a multivariate regression model with dummy variables for the event date. In general, the approach has two drawbacks - the test statistics

frequently have poor finite sample properties except in special cases, and often the test will have little power against economically reasonable alternatives (MacKinlay, 1997). A second way is the modified Patell statistic J_2 , which is a new test statistic that modifies the t statistic of Boehmer et al. (1991) to take into account the clustering issue of cross-sectional correlation. Kolari and Pynnönen (2010) show that it performs well in competition with others. We utilize the modified Patell statistic J_2 to correct the potential cross-sectional correlation.

Averaging the standardized cumulative abnormal returns $\overline{SCAR}_i(\tau_1, \tau_2)$ across stocks, we have

$$\overline{SCAR}(\tau_1, \tau_2) = \frac{1}{N} \sum_{i=1}^N \overline{SCAR}_i(\tau_1, \tau_2), \quad (9)$$

and its variance is as follows:

$$\text{Var}(\overline{SCAR}(\tau_1, \tau_2)) = \frac{L_1 - 2}{N(L_1 - 4)} (1 + (N - 1)\bar{r}), \quad (10)$$

where L_1 and \bar{r} denote the length of estimation period and the average cross-sectional correlation between the stocks' abnormal returns, respectively. Under the null hypothesis of no announcement effects, this yields the modified Patell statistic

$$J_2 = \frac{\overline{SCAR}(\tau_1, \tau_2)}{\sqrt{\frac{L_1 - 2}{N(L_1 - 4)} (1 + (N - 1)\bar{r})}} \stackrel{asy}{\sim} N(0, 1), \quad (11)$$

with \bar{r} denoting the average cross-sectional correlation coefficient of abnormal returns in the estimation period.

4. Results and Discussion

4.1. Results

Table 2 presents the information on the cumulative abnormal returns (CAR) and statistical inferences over three event windows, [-7, 0), [0, +7], and [-7, +7]. Two normal return models are employed: the mean-adjusted and the market-model-adjusted models. For comparison, empirical results on Guangdong are also reported.

Panel A of Table 2 shows the empirical results without considering the clustering for Hainan and Guangdong concept stocks over three windows. The \overline{CAR} of Hainan concept stocks under the market-model-adjusted method is -0.0047 during [-7, 0), which is different from the \overline{CAR} of 0.0204 under the mean-adjusted model. The two values are not significant. The results indicate that the values of the \overline{CAR} are not different from zero in the absence of the announcement of the tourism island policy. It seems likely that the policy information of the international tourism island has not been leaked to the market prior to the announcement.

During the event windows [0, +7] and [-7, +7], not only do all the \overline{CAR} s show positive values (0.0545 during [0, +7] and 0.0749 during [-7, +7] for the mean-adjusted, 0.0672 during [0, +7] and 0.0625 during [-7, +7] for the market-model-adjusted models), but the J_1 statistics indicate that they are significant at the 5% level for the mean-adjusted and 1% for the market-model-adjusted models, respectively. The results suggest that the announcement has a significant and positive effect on the price of Hainan concept stocks. The findings indicate that the announcement of a tourism island policy did indeed convey information useful for the valuation of Hainan concept firms. The regional tourism industrial identity bestowed by the central government proves to be valuable.

As is evident for Guangdong concept stocks, the values of the \overline{CAR} show the same pattern as the Hainan counterpart prior to the policy announcement. All the values of the \overline{CAR} are negative and insignificant during event windows $[0, +7]$ and $[-7, +7]$. They range from a high of -0.0100 to a low of -0.0357. The results clearly show that the announcement of the tourism island did not have any effect on the performance of the Guangdong concept stocks.

Empirical results for inference when considering the clustering are reported in panel B. The conclusions after correcting the cross-sectional correlation are consistent with those in panel A. First, the values of the \overline{SCAR} are not different from zero prior to the announcement. Second, the announcement has a significant and positive effect on the performance of Hainan concept stocks. Finally, the hypothesis of no effect on Guangdong concept stocks is statistically accepted. All the J_2 statistics in panel B are a little smaller than their counterparts in panel A. Even when cross-sectional correlation is relatively low, event-date clustering might be serious in terms of over-rejecting the null hypothesis of zero average abnormal return when it is true. The J_2 statistic, in essence, aims at addressing the over-rejecting problem (Kolari and Pynnönen, 2010).

Table 2 Cumulative Abnormal Returns and Statistical Inferences

Event Window	Hainan Concept Firms						Guangdong Concept Firms					
	Mean Adjusted			Market-Model-Adjusted			Mean Adjusted			Market-Model-Adjusted		
Panel A: Inference without Clustering												
	Average			Average			Average			Average		
	CAR	J_1 stat	p value	CAR	J_1 stat	p value	CAR	J_1 stat	p value	CAR	J_1 stat	p value
[-7, 0)	0.0204	0.9709	0.3316	-0.0047	-0.2853	0.7754	0.0012	0.0424	0.9661	-0.0257	-0.9111	0.3622
[0, +7]	0.0545	2.4294	0.0151	0.0672	3.8079	0.0001	-0.0237	-0.7761	0.4377	-0.0100	-0.3327	0.7392
[-7, +7]	0.0749	2.4374	0.0148	0.0625	2.5861	0.0097	-0.0225	-0.5377	0.5907	-0.0357	-0.8654	0.3867
Panel B: Inference with Clustering												
	Average			Average			Average			Average		
	SCAR	J_2 stat	p value	SCAR	J_2 stat	p value	SCAR	J_2 stat	p value	SCAR	J_2 stat	p value
[-7, 0)	0.6122	0.8535	0.4032	-0.0938	-0.2451	0.8063	0.0001	0.0002	0.9998	-0.0038	-0.0156	0.9875
[0, +7]	1.7120	2.3866	0.0170	1.0893	2.8449	0.0044	-0.0031	-0.0046	0.9963	-0.0014	-0.0057	0.9954
[-7, +7]	1.7200	2.3978	0.0164	0.9395	2.4537	0.0141	-0.0022	-0.0032	0.9974	-0.0036	-0.0148	0.9881

Notes: For Hainan concept stocks, \bar{r} takes 0.4831 and 0.0979 for the mean-adjusted and the market-model-adjusted values, respectively, in computing J_2 . For Guangdong concept stocks, \bar{r} takes 0.4748 and 0.0506 for the mean-adjusted and the market-model-adjusted values, respectively, in computing J_2 .

Figure 2 is provided in order to gain a visual sense of the pattern shown by the numbers in Table 2. It plots the mean cumulative daily abnormal returns over the event-window horizon [-7, +7], where day 0 represents the announcement date of the Hainan International Tourism Island Policy. The daily \overline{CAR} s of Hainan concept stocks under mean and market-model-adjusted methods are marked using a solid line with a filled square and a solid line with a solid triangle, respectively. The daily \overline{CAR} s of Guangdong concept stocks under mean and market-model-adjusted methods are marked using a dashed line with an open square and a solid line with an open triangle, respectively. The four curves almost display the same time series pattern of rising before descending during the event window [-7, 0). That is, the rising market trend induces the same ascending trend of Hainan concept stocks. It graphically indicates that the market may not gradually learn about the forthcoming announcement. It is possible that the policy information on the tourism island has not been leaked to the market prior to the announcement. The four curves diverge greatly after the announcement. The daily \overline{CAR} of Hainan concept stocks clearly shows

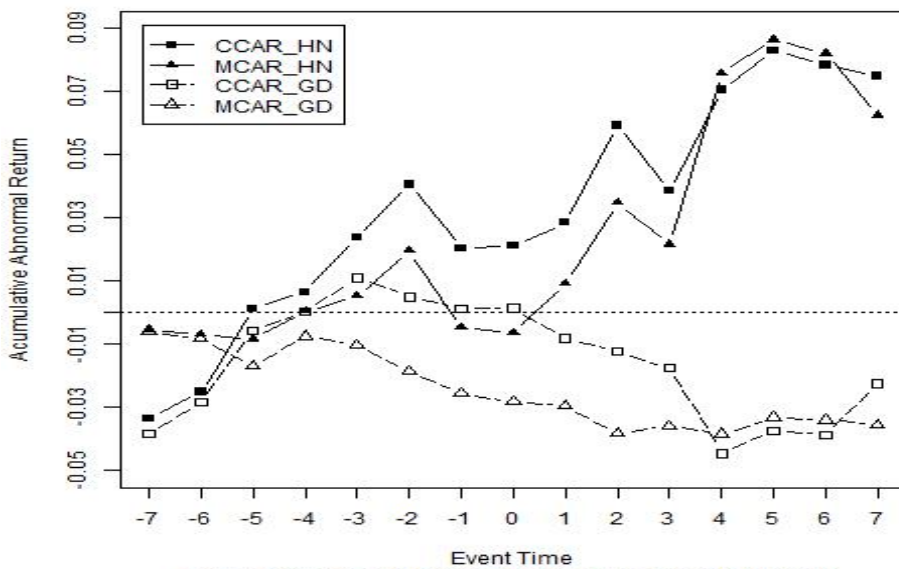


Figure 2 Cumulative Abnormal Returns over Event Windows

a steeply ascending trend. In comparison, the daily \overline{CAR} of Guangdong concept stocks gradually drifts down over the seven days after the announcement. It strongly echoes the preceding findings that the announcement effects are assimilated into the stock prices and that the regional industrial identity driven by the regional tourism industrial policy is valuable in the tourist destination region of Hainan Island.

Classical literature on the event-study approach finds that the announcement effects of good or bad news are usually captured in the returns on event day ($t=0$) or on day ($t=1$) in the case that announcements are made on event day after the close of the stock market. Moreover, the cumulative abnormal returns are usually relatively stable in the days after the announcement. By contrast, Figure 2 clearly shows that there are no effects of the policy announcement on event day, but the accumulative abnormal returns continuously go up on trading days 1, 2, 4, and 5. Hence, the time series pattern of the daily \overline{CAR} of Hainan concept stocks after the announcement is not consistent with those in previous literature. Although it may be due to the current structures of Chinese stock markets, further research is needed.

4.2. Discussion: Why Do Markets Positively Respond to the Announcement?

Before concluding the paper, we briefly investigate why markets positively evaluated the announcement of the regional tourism industrial policy in Hainan. To the extent that we can identify one or more credible mechanisms, the conclusion that regional tourism industry identity is valuable as a driving force behind the improvement of socioeconomic conditions may be considerably generalized. However, if we cannot find a credible mechanism, it may be difficult to argue that regional tourism industry policy is one exogenous factor resulting in the promotion of

regional development.

As is already evident, the announcement has conveyed the information on regional tourism industrial identity of Hainan to stock markets, and stock markets might expect that Hainan would grow as a world-class international tourist destination. Regional industrial identity is an important component in understanding the spatial arrangements of industrial and regional development (Romanelli and Khessina, 2005).¹⁵ Generally speaking, regional industrial identity is grounded in the configuration of industry clusters that populate a region. Judging from the announcement, we reasonably infer that in the future, Hainan Island will be a geographically large region with a single dominant tourism industry, which then fosters other industrial clusters through various channels. A great deal of literature (e.g., Jaffe et al., 1993; Audretsch and Feldman, 1996; Murtha et al., 2001) emphasizes the important role of regional industry clusters in stimulating new ideas and transferring knowledge across organizations. Hence, stock markets expect that the tourism industrial identity should accelerate the pace of innovation in the Hainan tourism industry. The dominant tourism industry is likely to create backward and forward linkages when its demand and supply enable upstream and downstream industries to be established or promoted in Hainan. Moreover, few would contest that China's political system is top-down (Li and Zhou, 2005; Wang and Wall, 2007). The policy decision made by the State Council to develop tourism on Hainan Island has been passed down to lower levels of government. The top-down decision-making has

¹⁵ Two important dimensions of strength and focus affect economic agents' understandings about Hainan Island and thus those agents' decisions to invest in Hainan Island. The strength dimension of the Hainan tourism industrial identity attracts the resources that flow into Hainan Island, and the focus dimension of the Hainan tourism industrial identity influences the heterogeneity of resources that flow into Hainan Island. The dimension of strength refers to the number and size of audiences that share a common view of the social and industrial activity in a region, and the dimension of focus is the extent to which the identity closely associates with just one kind of business activity.

provided the ability to impose a series of policies to promote and strengthen the regional tourism industry identity. For example, to realize the Hainan's tourism potential, well-planned, coordinated, and carefully implemented tourism development measures, investment in education and training to provide qualified human resources, development of optimum tourism products, and effective marketing promotions are required. A top-down political system ensures that these are effectively enforced.

Existing and prospective entrepreneurs and investors have perceived the hospitable and profitable environment of the tourism-dominated region of Hainan Island. Market investors have realized and made optimal use of the aforementioned information in forming their rational expectations regarding future values of Hainan concept stocks even before seeing any actual changes in the stocks. In other words, the identity of a regional tourism industry can create a positive value for Hainan's regional development. Hence, Hainan concept stocks significantly go up as a whole, and the stock markets positively evaluated the policy announcement of Hainan International Tourism Island.

5. Conclusions

Hainan Island has a rich diversity of attractions and tourism resources. China's central government and the Hainan provincial government recognized the potential economic and social contributions of the tourism industry and have been making efforts to turn Hainan into an international resort destination. On December 31, 2009, China's State Council announced ambitious plans for Hainan, "the national policy of Hainan International Tourism Island," to

elevate it to a world-class international tourism destination by 2020.

Based on a sample of 19 listed Hainan concept firms, which belong not only to the tourism industry but also to other various industries, we examine the announcement effects of the national policy by using an event-study approach. The empirical findings based on inferences without and with considering the clustering show that, first, the averages of (standardized) accumulative abnormal returns are not different from zero prior to the announcement; second, the policy announcement of Hainan International Tourism Island has a significant and positive effect on the price of Hainan concept stocks. The findings indicate that the stock prices of the listed firms in Hainan Island are significantly sensitive to the policy announcement of a tourism island, and the policy announcement did indeed convey information useful for the valuation of Hainan concept firms. From the angle of investors' expectations, these empirical findings indicate that macro-regional industrial policy plays a positive role in motivating market forces to invest in the destination region.

The mechanism by which Chinese capital markets positively respond to the tourism policy announcement is likely to be as follows. The national announcement of Hainan International Tourism Island has bestowed on Hainan a tourism industry identity and conveyed the relevant information to stock markets. Stock markets expect that the tourism industrial identity might increase the profitability and the pace of innovation in the Hainan tourism industry and that the dominant industrial cluster in tourism might play an important role in creating industrial backward and forward linkages. Therefore, the regional tourism industrial identity creates significant value for all industries in Hainan.

In the Hainan Island case, the regional development is directed at the tourism industry by the

policy of the central government. The effects of the tourism policy are likely to be different from those through natural selection and evolution such as the Las Vegas identity as a gambling and nightlife town. Hence, further research may compare the two types of identities forming and their dynamic evolutions and effects.

Finally, it is worth noting that we investigate the announcement effects using an event-study method. The method rests on one assumption, that markets are efficient in China. Although the latest literature (Lin et al., 2011; Chong et al., 2012; Mobarek and Fiorante, 2014) shows that Chinese stock markets are fairly efficient in weak form and that its market efficiency improved greatly over our sample period, the research on market efficiency is inconclusive, even in many developed markets.

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Appendix Guangdong Concept Stocks Listed in the Shanghai and Shenzhen Stock Exchanges

Company Code	Market Listed	Date of Being Listed	Price per Share (in RMB Yuan)	Shares Outstanding (in Millions)	Market Capitalization (in Million RMB Yuan)	Industry
000001	SZSE	Apr 03 1991	24.26	2924.11	70939.01	Banking
000002	SZSE	Jan 29 1991	11.53	9392.09	108290.85	Real estate
000005	SZSE	Dec 10 1990	6.3	913.74	5756.58	Real estate
000006	SZSE	Apr 27 1992	12.82	497.1	6372.84	Real estate
000007	SZSE	Apr 13 1992	7.54	184.97	1394.64	Hotel
000009	SZSE	Jun 25 1991	12.62	988.12	12470.07	Comprehensive
000010	SZSE	Oct 27 1995	10.98	67.79	744.38	Petrochemical
000011	SZSE	Mar 30 1992	11.9	139.74	1662.87	Real estate
000012	SZSE	Feb 28 1992	20.41	566.88	11570.11	Manufacturing
000014	SZSE	Jun 02 1992	18.43	201.7	3717.4	Real estate
000016	SZSE	Mar 27 1992	7.29	599.91	4373.33	Manufacturing
000019	SZSE	Oct 12 1992	9.76	73.32	715.61	Manufacturing
000020	SZSE	Apr 28 1992	12.4	64.68	801.98	Manufacturing
000021	SZSE	Feb 02 1994	13.46	878.6	11825.91	Computer and network
000022	SZSE	May 05 1993	14.53	464.79	6753.4	Transportation
000023	SZSE	Apr 29 1993	11.21	91.83	1029.47	Manufacturing
000024	SZSE	Jun 07 1993	31.09	646.43	20097.65	Real estate
000025	SZSE	Jun 21 1993	11.12	179.29	1993.76	Retail
000026	SZSE	Jun 03 1993	11.34	79.55	902.06	Retail
000027	SZSE	Sep 03 1993	13.4	598.66	8022.01	Electricity
000028	SZSE	Aug 09 1993	29.02	233.26	6769.13	Wholesale
000029	SZSE	Sep 15 1993	7.83	891.65	6981.65	Real estate
000030	SZSE	Sep 29 1993	8.13	60.38	490.93	Manufacturing
000031	SZSE	Oct 08 1993	13.02	1813.71	23614.52	Real estate
000032	SZSE	Oct 28 1993	9.3	232.82	2165.22	Electronic
000033	SZSE	Jan 03 1994	7.31	318.94	2331.43	Hotel
000036	SZSE	Jun 17 1994	7.03	1123.89	7900.93	Real estate
000037	SZSE	Jul 01 1994	7.95	338.9	2694.22	Electricity
000039	SZSE	Apr 08 1994	11.87	1231.3	14615.5	Manufacturing
000040	SZSE	Aug 08 1994	7.91	349.67	2765.9	Real estate
000042	SZSE	Sep 21 1994	26.09	239.32	6243.89	Real estate
000043	SZSE	Sep 28 1994	17.93	110.83	1987.12	Real estate
000045	SZSE	Aug 15 1994	12.12	195.58	2370.38	Wholesale
000046	SZSE	Sep 12 1994	16.19	444.52	7196.75	Real estate
000048	SZSE	Nov 01 1994	5.27	379.85	2001.8	Food processing

y Code	Listed	Being Listed	(in RMB Yuan)	Outstanding (in Millions)	(in Million RMB Yuan)	
000049	SZSE	Mar 20 1995	11.49	71.3	819.29	Manufacturing
000050	SZSE	Mar 15 1995	6.54	312.19	2041.71	Manufacturing
000055	SZSE	Apr 15 1996	10.68	217.41	2321.9	Manufacturing
000058	SZSE	Dec 26 1996	7.73	538.3	4161.08	Consultative
000060	SZSE	Jan 23 1997	27.18	790.95	21497.95	Manufacturing
000061	SZSE	Jan 10 1997	12.44	476.24	5924.37	Consultative
000062	SZSE	Jan 30 1997	10.55	166.86	1760.4	Consultative
000063	SZSE	Nov 18 1997	39.29	1467.31	57650.49	Manufacturing
000066	SZSE	Jun 26 1997	14.43	550.08	7937.63	Manufacturing
000068	SZSE	Jun 11 1997	8.87	474.35	4207.49	Manufacturing
000069	SZSE	Sep 10 1997	21.02	1337.31	28110.3	Tourism
000070	SZSE	May 11 2000	8.84	237.69	2101.16	Manufacturing
000078	SZSE	Dec 18 1998	19.41	439.27	8526.14	Retail
000088	SZSE	Jul 28 1997	8.58	406.1	3484.36	Transportation
000089	SZSE	Apr 20 1998	7.43	653.13	4852.72	Transportation
000090	SZSE	Jul 21 1999	13.78	435.96	6007.6	Building
000096	SZSE	Jul 24 2000	7.65	276.57	2115.76	Wholesale
000099	SZSE	Jul 31 2000	8.2	274.03	2247.03	Transportation
000100	SZSE	Jan 30 2004	4.85	2497.38	12112.28	Manufacturing
000150	SZSE	Aug 07 2000	8.33	159.47	1328.36	Real estate
000409	SZSE	Jun 27 1996	8.12	165.95	1347.51	Mining
000429	SZSE	Feb 20 1998	5.55	464.28	2576.73	Transportation
000502	SZSE	Nov 23 1992	10.92	134.5	1468.71	Real estate
000507	SZSE	Mar 26 1993	8.76	246.62	2160.4	Transportation
000513	SZSE	Oct 28 1993	39.6	158.42	6273.6	Medical manufacturing
000522	SZSE	Nov 08 1993	14.51	469.03	6805.62	Medical manufacturing
000523	SZSE	Nov 08 1993	7.96	94.15	749.47	Chemical manufacturing
000524	SZSE	Nov 18 1993	8.35	184.59	1541.35	Hotel
000527	SZSE	Nov 12 1993	22.04	2078.38	45807.4	Electronic manufacturing
000529	SZSE	Nov 18 1993	8.04	237.66	1910.82	Food processing
000531	SZSE	Jan 06 1994	17.57	266.52	4682.76	Electricity
000532	SZSE	Jan 03 1994	13.29	315.2	4188.98	Comprehensive
000533	SZSE	Jan 03 1994	10.43	398.38	4155.09	Electronic manufacturing
000534	SZSE	Jan 10 1994	9.01	207.46	1869.19	Real estate
000539	SZSE	Nov 26 1993	8.12	1986.86	16133.29	Electricity
000541	SZSE	Nov 23 1993	9.96	615.28	6128.15	Electric manufacturing
Compan y	Market Listed	Date of Being Listed	Price per Share (in RMB Yuan)	Shares Outstanding	Market Capitalization (in Million RMB)	Industry

Code				(in Millions)	Yuan)	
000573	SZSE	Aug 15 1994	5.45	535.2	2916.84	Real estate
000576	SZSE	Sep 07 1994	6.74	250.52	1688.48	Papermaking
000601	SZSE	Aug 30 1996	7.48	775.51	5800.84	Electricity
000636	SZSE	Nov 29 1996	9.19	548.44	5040.21	Electronic manufacturing
000637	SZSE	Nov 14 1996	9.43	254.75	2402.28	Petrochemical
000651	SZSE	Nov 18 1996	27.33	1851.22	50593.71	Electronic manufacturing
000659	SZSE	Dec 03 1996	7.3	488.69	3567.44	Plastic manufacturing
000685	SZSE	Jan 23 1997	28.49	157.26	4480.35	Water service
000690	SZSE	Jan 28 1997	9.7	1127.85	10940.16	Electricity
000712	SZSE	Apr 15 1997	18.33	190.97	3500.56	Water service
000782	SZSE	Jun 19 1997	6.7	404.49	2710.07	Chemical manufacturing
000823	SZSE	Oct 08 1997	8.1	288.22	2334.61	Electronic manufacturing
000828	SZSE	Jun 17 1997	7.69	636.53	4894.93	Transportation
000861	SZSE	Oct 28 1998	12.68	149.14	1891.08	Consultative
000893	SZSE	Dec 24 1998	22.71	109.89	2495.5	Vegetable oil processing
000973	SZSE	May 25 2000	9.4	514.76	4838.78	Plastic manufacturing
000975	SZSE	Jun 08 2000	8.03	386.38	3102.62	Mining
000976	SZSE	Jun 01 2000	4.92	408.71	2010.84	Manufacturing
000987	SZSE	Jul 18 2000	24.67	358.42	8842.33	Retail
000999	SZSE	Mar 09 2000	20.6	338	6962.71	Medical manufacturing
600004	SHSE	Apr 28 2003	9.89	1015	10038.35	Transportation
600029	SHSE	Jul 25 2003	5.99	1500	8985	Transportation
600030	SHSE	Jan 06 2003	29.19	6570.47	191791.95	Finance
600036	SHSE	Apr 09 2002	17.29	15658.81	270740.83	Banking
600048	SHSE	Jul 31 2006	24.9	3188.05	79382.35	Real estate
600083	SHSE	Jun 06 1997	8.27	206.34	1706.44	Electronic manufacturing
600098	SHSE	Jul 18 1997	7.98	2059.2	16432.42	Electricity
600143	SHSE	Jun 23 2004	10.37	659.77	6841.78	Plastic manufacturing
600162	SHSE	Jun 09 1998	9.16	361.7	3313.15	Real estate
600183	SHSE	Oct 28 1998	9.76	956.66	9336.98	Electronic manufacturing
600242	SHSE	Dec 07 2000	7.93	95.52	757.51	Transportation
600325	SHSE	Feb 25 2004	22	817.05	17975	Real estate
600332	SHSE	Feb 06 2001	12.49	591	7381.59	Medical manufacturing
600380	SHSE	Jun 08 2001	9.8	1097.87	10759.17	Medical manufacturing
600382	SHSE	Jan 18 2001	8.09	278.55	2253.48	Wholesale
600383	SHSE	Apr 12 2001	15.48	2181.6	33771.17	Real estate
Compan				Shares	Market Capitalization	
y	Market	Date of	Price per Share	Outstanding	(in Million RMB	
Code	Listed	Being Listed	(in RMB Yuan)	(in Millions)	Yuan)	Industry

600393	SHSE	Mar 19 2001	10.52	289.18	3042.12	Real estate
600428	SHSE	Apr 18 2002	11.07	1310.42	14506.39	Transportation
600433	SHSE	Jun 19 2003	7.99	160	1278.4	Papermaking
600446	SHSE	Dec 24 2003	13.12	137.44	1803.21	Computer and network
600499	SHSE	Oct 10 2002	18.5	446.9	8267.67	Manufacturing
600518	SHSE	Mar 19 2001	10.7	1694.37	18129.76	Manufacturing
600525	SHSE	Dec 02 2002	23.56	151.63	3572.42	Manufacturing
600548	SHSE	Dec 25 2001	6.39	1433.27	9158.6	Transportation
600589	SHSE	Jun 12 2001	7.71	533.25	4111.36	Chemical manufacturing
600684	SHSE	Oct 28 1993	13.88	187.04	2596.11	Real estate
600685	SHSE	Oct 28 1993	27.26	337.28	9194.24	Manufacturing
600728	SHSE	Jul 16 1996	10.05	81.12	815.26	Computer and network
600866	SHSE	Aug 18 1994	11.88	419.86	4987.96	Food processing
600868	SHSE	Sep 12 1994	3.77	1898.15	7156.02	Electricity
600872	SHSE	Jan 24 1995	11.16	724.22	8082.25	Food processing
600894	SHSE	Mar 28 1996	7.92	762.41	6038.28	Manufacturing
600978	SHSE	Aug 24 2004	7.81	759.41	5930.97	Manufacturing
600988	SHSE	Apr 14 2004	12.36	34.06	420.96	Mining
601318	SHSE	Mar 01 2007	56.82	3926.59	223108.65	Insurance
601333	SHSE	Dec 22 2006	4.86	2747.99	13355.22	Transportation

Note: SZSE and SHSE are short for Shenzhen and Shanghai Stock Exchanges, respectively. Price per share, shares outstanding, and market capitalization are figures on November 30, 2009. For firms with codes 000068 and 000090, we took the figures of December 1, 2009, due to missing values. Our data are from the China Stock Market and the Accounting Research Database.