



# The going-public decision and rent-seeking activities: Evidence from Chinese private companies



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## ABSTRACT

This paper examines the determinants and consequences of going public for Chinese private companies during the process of reforms and opening up in China with a full sample that includes 584 initial public offerings (IPOs) of private companies and 584 of non-listed private companies from 2006 to 2014. Our results first reveal that the decision to go public is positively correlated to firm size and the market-to-book (MTB) ratio of the corresponding industry and negatively correlated to financial leverage and firm age. However, when considering the role of rent-seeking activities, the effect of the MTB ratio switches from positive to negative. The evidence also indicates that IPOs have a negative impact on firm performance, although they have a positive impact on the asset liability ratio and total assets afterwards. These findings offer several useful insights for policymakers and researchers.

## 1. Introduction

It is widely recognized that the decision to go public is one of the most important and least studied research areas in corporate finance. Several theoretical studies have shown that an initial public offering (hereinafter IPO): (1) creates liquidity for the company's shares (Mello and Parsons, 1998); (2) provides an infusion of capital to fund growth (Ritter and Welch, 2002; Kim and Weisbach, 2008); (3) allows insiders who are holding a company's stock to cash out (Zingales, 1995); (4) provides cheaper and ongoing access to capital; (5) facilitates the sale of the company; (6) gives private equity investors the ability to diversify their risk (Pagano, 1993); (7) allows venture capitalists and other early-stage investors to exit their investment (Black and Gilson, 1998); and (8) increases the transparency of the company by subjecting it to capital market discipline (Maksimovic and Pichler, 2001). Although these numerous theoretical arguments were sufficient in the past, empirical evidence on why firms go public and on the investment and financing activities of IPO firms is limited (Pagano et al., 1998; Celikyurt et al., 2010). This paper fills the gap in the literature by addressing determinants of the going-public decision not only from the ex ante characteristics of the companies that go public but also from the ex post consequences of this decision on their performance.

The understanding of the decision to go public remains incomplete. Previous studies have mainly concentrated on developed or industrialized countries, offering little information on transitional or emerging economies. For example, Pagano et al. (1998) analyze

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the determinants and consequences of IPOs by using a sample of 69 Italian private companies that went public over the period 1982–1992. They find that independent companies decided to go public primarily to rebalance their capital structure and reduce the cost of credit after the IPO. Using a sample of 17,226 IPOs and 13,142 seasoned equity offerings (SEOs) from 38 countries between 1990 and 2003, Kim and Weisbach (2008) show that the benefit of financing capital expenditures and exploiting mispricing are motives for IPOs and SEOs. Bancel and Mittoo (2009) survey chief financial officers (CFOs) from 12 European countries regarding the cost and benefits of going-public decisions. The evidence suggests that the decision to go public cannot be explained by any single theory. There is growing awareness that detailed knowledge regarding the decision to go public is required in the case of China for a better understanding. From the perspective of market development, on December 19, 1990, and July 3, 1991, respectively, the Shanghai and Shenzhen Stock Exchanges were launched, signaling the most significant step toward market-oriented reform and privatization in China. China's stock market has now become the second largest in the world, both by trading volume and market capitalization (Johansson et al., 2017; Zhou and Sadeghi, 2019). With the development of its capital market, many state-owned enterprises (SOEs) have been privatized by going public. On the other hand, through the process of market-oriented reforms, more and more private companies are listed. These developments provide promising opportunities for further investigation. In addition, unlike most developed countries, where a primary rationale behind establishing stock exchanges is to reallocate capital, the main motivation for launching China's stock exchanges was to allow SOEs to raise capital and to improve their operating performance (Green, 2003; Jiang and Kim, 2015). Under this paradigm of development, seeing what affects the going-public decision and the consequences of this decision are interesting issues worth thoroughly investigating.

Moreover, China's unique institutional and regulatory environment might cause a very different pattern in government policies (Lee et al., 2015a,b; Lee and Lee, 2019; Peng et al., 2019), making this policy environment particularly suitable to discuss going-public activities in the stock market. China's financial market has been tightly regulated by the government (Chen et al., 2016, 2017; Lee and Huang, 2019; Zhou and Sadeghi, 2019). It is widely recognized that one salient feature of China's capital market is the use of a merit-based IPO system (Piotroski and Zhang, 2014; Li and Zhou, 2015; Johansson et al., 2017). The China Securities Regulatory Commission (CSRC), which is the main securities regulator domestically, is responsible for approving IPOs. Today, its explicit role in the IPO process is simply to make sure that issuers are in compliance with the rules. However, the reality is that CSRC still tightly controls the IPO process, as it has the final say on which firms, if any, go public (Jiang and Kim, 2015).<sup>1</sup> Under this approval system, political connections have an important bearing on whether a firm is granted regulatory approval for an IPO (Piotroski and Zhang, 2014; Chen et al., 2017; Rumokoy et al., 2107). Rent-seeking in a modern economy means spending money on lobbying for government subsidies in order to be given wealth that has already been created or imposing regulations on competitors in order to increase market shares, transferring funds to connected firms through excessive continuation (Kornai, 1986). As Krueger (1974) observes, rents are created whenever the government imposes restrictions on economic activities. During more than three decades of rapid growth and market transformation in China, the existence of rent-seeking activities is inevitable due to state intervention (Khan, 2004; Chu and Song, 2015), and thus entrepreneurs invest in building political connections to gain access to resources via rent-seeking activities (Du and Mickiewicz, 2016). In China, many rent-seeking activities have unproductively damaged the economy. Rent-seeking and corruption have become a worrying trend as a result of the market transition process (Wu and Huang, 2008; Chu and Song, 2015). Therefore, our study's goal is to understand how the resources for listing in China are allocated, and what the determinants and consequences of going public are for Chinese private companies against this background.

In summary, the main purpose of this paper is to examine the determinants and consequences of going public for private companies during the process of reforms and opening up in China. We are also concerned about the role of rent-seeking activities of private companies. According to the trade-off theory of costs and benefits of going public, the investment financing explanation of equity issues and rent-seeking theory, we present five hypotheses. Using large databases of private firms in China, such as the Oriana, RESSET and CSMAR databases, enables us to analyze the determinants of IPOs by comparing the ex ante and ex post characteristics of IPOs with those of private firms. Our full sample includes 584 IPO private companies and 584 non-listed private companies over the period 2006–2014. We mainly find that rent-seeking activities of Chinese private companies have a positive impact on the probability of listing and the performance after the IPO.

The present study makes a number of contributions to the literature. First, previous studies have focused on the consequences of IPO, but do so under data limitations. They mainly focus on market reactions to the IPO and its performance (see, for example, Jain and Kini, 1994; Mikkelsen et al., 1997; Rajan and Servaes, 1997; Guldiken et al., 2017; Jog et al., 2019; Zhou and Sadeghi, 2019). We supplement previous empirical studies by examining the determinants and consequences of going public for Chinese private companies. Second, after accounting for China's institutional and regulatory environment, our findings extend the literature on the impact of rent-seeking activities of Chinese private companies on the probability of their IPO. Finally, our results complement the findings of Du et al. (2012) concerning the positive effect of political connections on the post-IPO performance of Chinese private listed companies.

The remainder of the paper proceeds as follows. Section 2 briefly reviews the economic literature and establishes our main research hypotheses. Section 3 outlines the methodology and introduces the data sources and variable definitions. Section 4 presents the empirical analysis, and Section 5 offers conclusions and some policy implications.

<sup>1</sup> All applicant companies must meet the following historical financial performance criteria to be eligible for an initial public offering on one of China's two stock exchanges. (1) Cumulative net profit in the three years prior to the IPO must exceed 30 million Renminbi (RMB), and the company cannot have reported a net loss in any of the past three years; (2) Cumulative revenue in the three years prior to the IPO must equal at least RMB 300 million or cumulative cash flow from operations in the three years prior to the IPO must be at least RMB 50 million; (3) Intangible assets cannot account for more than 20% of total assets; (4) Net assets in the year before the IPO must total at least RMB 30 million.

## 2. Literature review

### 2.1. The motivations or determinants of going public

The literature suggests five theoretical motivations for going public: to raise funds, to cash out in the future, to facilitate acquisitions, to take advantage of stock price overvaluation, and as a strategic corporate move (see Zingales, 1995; Ang and Brau, 2003; Brau et al., 2003; Brau and Fawcett, 2006, for more details). From a practical viewpoint, many existing studies emphasize some aspects of the traditional trade-off between the costs and benefits of going public (Pagano, 1993; Bolton and von Thadden, 1998; Chemmanur and Fulghieri, 1999; Pagano and Roell, 1998; Yosha, 1995; Zingales, 1995). These costs include registration and underwriting costs, underpricing cost, annual disclosure cost, and the agency problems generated by a separation of ownership and control. The benefits include diversification, the possibility of equity financing beyond the initial entrepreneur's limited wealth, less costly access to the capital market, increased liquidity of the company's shares, and some outside monitoring (Jensen and Meckling, 1976; Ritter, 1987; Holmstrom and Tirole, 1993; Zingales, 1995; Boot et al., 2006).

Bancel and Mittoo (2009) suggest that the decision to go public is a complex one and cannot be explained by one single theory, because firms seek multiple benefits from going public. These motivations are influenced by the firm's ownership structure, size and age as well as by the home country's institutional and regulatory environment. In addition, Dittmar and Thakor (2007) document that managers use equity to finance projects when they believe investors' views on project payoffs are largely aligned with their own, otherwise, they use debt.

From the empirical aspect, two main methods including direct empirical research and CFO surveys can help examine the determinants and consequences of going public for Chinese private companies. One of the principal difficulties in examining the determinants of IPO decisions is the lack of pre-offering data for non-listed firms (Pagano et al., 1998; Ritter and Welch, 2002; Piotroski and Zhang, 2014). Thus, in order to examine the determinants of going public by estimating a probit model, it is important to obtain and select relevant research data.

The existing literature generally adopts company financial characteristics such as size, sales, profitability, leverage, market-to-book ratio (hereinafter MTB), etc., as variables of the determinants and consequences of going public. Small and young companies are expected to encounter more difficulties in listing according to either 'adverse selection' (Chemmanur and Fulghieri, 1999) or 'fixed cost' considerations (Ritter, 1987). In theory, highly leveraged or high investment companies are more likely to go public in order to overcome their financial constraints (Pagano et al., 1998). For firms with a high market-to-book ratio, which are associated with greater growth opportunities in the future (the so-called *window of opportunity hypothesis*), the IPO path is an optimal method to transfer control (Zingales, 1995) or exploit mispricing in the market (Ritter, 1991).

We may thus expect that the likelihood of IPO is positively correlated to size, leverage, profitability, MTB and age. Investigating private firms in Italy, Pagano et al. (1998) also find size, financial leverage and MTB to be important determinants of going public. However, by using Chinese companies' data over 2001–2008, Piotroski and Zhang (2014) discover that the relation between size and IPO listing decisions is negative, different from the extant studies. Hence, in China we must discuss some country characteristics (e.g. the country's economic and political reforms, listing system, etc.) and not just company financial characteristics. These are interesting issues for this paper to examine.

### 2.2. The influence of rent-seeking activities on listing: the case of China

During the past three decades of reforms and opening up in China, private companies have made great progress in spite of facing trade barriers, monopolies, or industry access restrictions and other adverse circumstances. This phenomenon is known as the mystery of China's development (Allen et al., 2005). In order to explain it, Chinese and foreign scholars have started to closely watch and study the political connections of Chinese private companies (Fan et al., 2007; Li et al., 2008; Du et al., 2010). Political connections can bring private companies industry access, low tax rates, low interest rates, more long-term loans, government financial subsidies, and so on (Tang et al., 2010; Luo and Zhen, 2008; Wu and Huang, 2008; Yu et al., 2008; Wu et al., 2009; Luo and Liu, 2009; Zhang et al., 2010; Chen et al., 2011). Therefore, private companies are more likely to spend much time and money on establishing political connections via rent-seeking activities.

Chinese private companies have difficulties in external financing, which is one of the main factors restricting their development (Gregory et al., 2001; Xu and Guan, 2004; Luo and Zhen, 2008). For instance, Luo and Zhen (2008) prove that private companies with political connections have less external financing constraints than those without. Using data on Chinese private listing companies from 2004 to 2008, Du et al. (2010) argue that the political connections of private companies are mainly established through rent-seeking activities. Therefore, in China the more rent-seeking activities private companies conduct, the stronger are their political connections and the easier it is for them to get access to bank loans, and so on.

As mentioned above, companies decide whether to go public according to the trade-off between the costs and benefits of such a business plan. On the one hand, private companies with more rent-seeking activities have the opportunity of receiving preferential loans; on the other hand, once listed, private companies must meet the requirements of information disclosure, external regulation and corporate governance. Therefore, having gained benefits through rent-seeking activities, private companies will weigh the costs and benefits and then decide whether to apply for listing or not (Jensen and Meckling, 1976; Ritter, 1991; Holmstrom and Tirole, 1993; Zingales, 1995; Boot et al., 2006).

Many scholars suspect that applicant companies engage in activities to establish relationships with regulators to help obtain IPO approval. Ding et al. (2015) explore rent-seeking behavior in China, which has a heavily regulated equity financing market. They find

that over one-third of firms receive late-stage private equity investment and subsequently 50 % rejection rates for IPO applications compared to firms without private equity investment. Such private equity investors help firms pass the regulatory barriers. Rumokoy et al., 2019 indicate that political connections can benefit private companies in the form of easier access to IPO markets and lower fixed IPO costs in China's capital market. Chen et al. (2017) find that politically connected underwriters increase the likelihood of private companies' IPO applications being approved by the CSRC. Thus, we hypothesize that companies with more rent-seeking activities are more likely to go public than those with less rent-seeking activities.

### 2.3. The consequences of going public

There is a large strand of literature devoted to the long-run performance of IPOs (Dong et al., 2011). Ritter (1991), Loughran (1993) and Loughran and Ritter (1995) document the long-run underperformance of IPOs. Using a U.S. sample of IPOs completed between 1975 and 1987, Rajan and Servaes (1997) note that firms going public are associated with underpricing, hot issue markets and long-run underperformance. Jain and Kini (1994) and Mikkelsen et al. (1997) also illustrate a reduction in profitability after an IPO. Following in this vein, Pagano et al. (1998) further find that profitability declines after the IPO, and that the effect increases gradually but steadily from the first to the fourth year with the fall in profitability statistically significant at the 1 % level in each individual year. Jog et al. (2019) examine the long-term post-IPO performance of two-stage IPOs and find that two-stage IPO firms exhibit a lower operating performance than matched Chinese IPOs.

In addition to the aforementioned performance variables, Pagano et al. (1998) also find a reduction in investment and financial leverage beyond the first three years after the IPO and document that independent companies experience a reduction in the cost of bank credit after their IPO. Finally, they show that in the three years after an IPO, the turnover in the control group is larger than normal. Aharony et al. (2000) examine the IPO-related earnings management phenomenon in China's emerging capital markets. Measuring earnings performance and accruals for a sample of 83 newly listed firms, they find that the post-IPO decline in return on assets (ROA) is more significant for B-Share companies than for H-Share companies. In addition, research on stock markets suggests that IPO underpricing is a worldwide phenomenon. Chi and Padgett (2005) find that the average underpricing is 127.3 % for Chinese IPOs. Based on first-day IPO underpricing from 1998 to 2008, Zhou and Sadeghi (2019) also show that China's IPO market has an extremely high IPO underpricing rate.

In summary, the extensive literature generally agrees on the existence of long-run underperformance following IPOs. This has been considered as either earnings management or window dressing behavior prior to the IPO (Jain and Kini, 1994; Teoh et al., 2002; Jog et al., 2019), or the market's correction of over-valued IPO shares (Aggarwal et al., 1993; Kooli and Suret, 2004; Borges, 2007). Compared with the above studies, recent experience highlights the importance of rent-seeking activities. When rent-seeking activities are considered, Du et al. (2010) find that there is a significant positive correlation between political connections and company performance. Private companies with more rent-seeking activities have an opportunity to raise equity capital, thereby increasing their financial performance. However, the authors only control for some company characteristics to examine the impact of political connections on corporate performance without looking into the dynamic effects of rent-seeking activities on company performance after the listing. In this paper, we expect that profitability declines after the IPO, but the rent-seeking activities of private companies have a positive impact on their performance.

## 3. Methodology and data

### 3.1. Estimation of the motivation for going public

Following Pagano et al. (1998), the basic probit model is modified for our Chinese sample.

$$\Pr(\text{IPO}_{it} = 1) = \alpha + \beta_1 \text{SIZE}_{i,t-1} + \beta_2 \text{CAPEX}_{i,t-1} + \beta_3 \text{GROWTH}_{i,t-1} + \beta_4 \text{ROA}_{i,t-1} + \beta_5 \text{LEVERAGE}_{i,t-1} + \beta_6 \text{MTB}_{i,t-1} + \beta_7 \text{AGE}_{i,t} + \theta_t \text{YEAR}_t + \varepsilon_{it} \quad (1)$$

The estimation method is maximum likelihood. Here,  $\text{IPO}_{it}$  is a variable that equals 0 if company  $i$  stays private in year  $t$  and 1 if it goes public;  $\text{SIZE}_{i,t-1}$  is the lagged value of the logarithm of operating revenues, which are used as the proxy variable of a company's size;  $\text{CAPEX}_{i,t-1}$  is the growth rate of capital expenditures over property plant and equipment;  $\text{GROWTH}_{i,t-1}$  is the growth rate of operating revenues in that year;  $\text{ROA}_{i,t-1}$  is the lagged value of net income divided by total assets;  $\text{LEVERAGE}_{i,t-1}$  is the lagged value of the ratio of the book value of total debts divided by the book value of total assets;  $\text{MTB}_{i,t-1}$  is the median market-to-book value of total assets of firms in the same industry that are traded on the Shanghai and Shenzhen Stock Exchanges;  $\text{AGE}_{i,t}$  is the logarithm of company age; and  $\text{YEAR}_t$  is a year-specific effect, while  $\varepsilon_{it}$  is an error term.

In order to obtain loans, tax preferences, reductions in barriers to entry, and other privileges and concessions, private companies implement rent-seeking activities, and through this process spend a number of gray, non-transparent fees that finally result in excess administrative expenses (Cai et al., 2009). Therefore, excess administrative expenses are used as the proxy variable for rent-seeking activities (Ang et al., 1982; Du et al., 2010). According to the regulation of the accounting system in China, administrative expenses include the various costs of the administrative departments of enterprises for organizing and managing production and operating activities. Thus, the method for calculating the excess administrative expenses is: first, to control for the various company factors affecting the administrative expenses; second, to calculate the expected administrative expenses of each company based on the regression coefficient; third, to calculate the difference between the actual administrative expenses and the expected administrative

expenses; finally, to get the excess administrative expenses.

Eq. (1) presents the basic model designed to examine the determinants of going public. Eq. (2) adds the excess administrative expenses variable to examine the impact of rent-seeking activities on the decision to go public.

$$\begin{aligned} \Pr(\text{IPO}_{it} = 1) = & \alpha + \beta_1 \text{EAE}_{i,t-1} + \beta_2 \text{SIZE}_{i,t-1} + \beta_3 \text{CAPEX}_{i,t-1} + \beta_4 \text{GROWTH}_{i,t-1} + \beta_5 \text{ROA}_{i,t-1} + \beta_6 \text{LEVERAGE}_{i,t-1} + \beta_7 \text{MTB}_{i,t-1} \\ & + \beta_8 \text{AGE}_{it} + \theta_t \text{YEAR}_t + \varepsilon_{it} \end{aligned} \tag{2}$$

Here,  $\text{EAE}_{i,t-1}$  is the excess administrative expenses that equal the logarithm of the ratio of actual administrative expenses divided by expected administrative expenses. Following Richardson (2006) and Du et al. (2010, 2012), we regress the actual administrative expenses against some influencing factors.

$$\begin{aligned} \text{AE}_{it} = & \alpha + \beta_1 \text{SIZE}_{i,t-1} + \beta_2 \text{LEVERAGE}_{i,t-1} + \beta_3 \text{GROWTH}_{i,t-1} + \beta_4 \text{STAFF}_{i,t-1} + \beta_5 \text{MARGIN}_{i,t-1} + \beta_6 \text{CI}_{i,t-1} + \beta_7 \text{AGE}_{it} \\ & + \beta_8 \text{LIST}_{i,t} + \theta_t \text{YEAR}_t + \varepsilon_{it} \end{aligned} \tag{3}$$

Here,  $\text{AE}_{it}$  is the logarithm of actual administrative expenses for company  $i$  in year  $t$ . The meanings of  $\text{SIZE}_{i,t-1}$ ,  $\text{LEVERAGE}_{i,t-1}$ ,  $\text{GROWTH}_{i,t-1}$ , and  $\text{YEAR}_t$  are the same as those in Eq. (1). In addition,  $\text{STAFF}_{i,t-1}$  is the logarithm of number of employees;  $\text{MARGIN}_{i,t-1}$  is the ratio of operating margin divided by operating income;  $\text{CI}_{i,t-1}$  is the ratio of fixed assets divided by total assets.  $\text{AGE}_{it}$  is the logarithm of company age;  $\text{LIST}_{it}$  is a dummy variable which equals 1 if a company is listed in year  $t$ , and 0 otherwise. The fitted values of this regression are therefore used as a proxy for the expected administrative expenses.

Eq. (4) examines the impact of going public on rent-seeking activities.

$$\text{EAE}_{it} = \alpha + \beta_1 (\text{LIST\_Dummy}_{it} * \text{EAE}_{i,t-1}) + \beta_2 \text{EAE}_{i,t-1} + u_i + d_t + \varepsilon_{it} \tag{4}$$

Here,  $\text{LIST\_Dummy}_{it}$  is a dummy variable equal to 1 if a company is listed in year  $t$  and equal to 0 otherwise; and  $u_i$  and  $d_t$  are firm-specific and calendar year-specific effects, respectively.

### 3.2. The use of IPO capital

Kim and Weisbach (2008) identify the listing motivation by examining the use of capital raised in IPOs. Following in this vein, we utilize Eq. (5) to estimate the use of capital raised in the IPO. We normalize each source of funds by total assets in the year of IPOs and take the log of one plus the normalized cash flow to minimize the effect of outliers. We also include the log of total assets in the year of IPOs as a control variable and fixed effect for year and region. For each of the seven possible uses for the raised capital, we then estimate Eq. (5).

$$\begin{aligned} Y = & \beta_1 \ln \left[ \left( \frac{\text{IPO capital}}{\text{total assets}_0} \right) + 1 \right] + \beta_2 \ln \left[ \left( \frac{\text{other sources}}{\text{total assets}_0} \right) + 1 \right] + \beta_3 \ln [\text{total assets}_0] + \sum_{i=2008}^{2013} \theta_i \text{Year\_dummy}_i + \lambda_j \text{Region\_dummy}_j \\ & + \varepsilon \end{aligned} \tag{5}$$

where

$Y = \ln[(V_t - V_0 / \text{total assets}_0) + 1]$  for  $V =$  total assets, inventory, or cash,

$= \ln[(\sum_{i=1}^t V_i / \text{total assets}_0) + 1]$  for  $V =$  capital expenditure, R&D, reduction in long-term debt, or in loan

other sources  $= \sum_{i=1}^t \text{total sources of funds}_i - \text{IPO capital}$ ,

and  $t = 1, 2, 3$  years after the IPO. IPO capital is the new capital from the sold primary shares and other sources of incremental funds available to the company. Total sources of funds include internally generated cash flow from the firm's continuing operations, investments and financing activities. Finally,  $\text{Year\_dummy}$  equals 1 for the years 2008, 2009, 2010, 2011, 2012, or 2013 and 0 otherwise.  $\text{Region\_dummy}$  is a region dummy variable that equals 1 if a company is in Beijing, Shanghai, Tianjin, Jiangsu, Zhejiang, Fujian and Guangdong, and 0 otherwise.<sup>2</sup>

### 3.3. Estimation of the consequences of going public

Following Pagano et al. (1998), Eq. (6) is a basic model to examine the consequence of going public, and Eq. (7) is an adjusted model to examine the impact of rent-seeking activities on the performance after the IPO.

$$y_{it} = \alpha + \sum_{j=1}^3 \beta_j \text{IPO}_{t-j} + \beta_4 \text{IPO}_{t-n} + \gamma y_{i,t-1} + u_i + d_t + \varepsilon_{it} \tag{6}$$

<sup>2</sup> There are large variations among different regions in China. The regional inequality between coastal and inland areas is widely known as a challenge for the Chinese economy. The literature has long acknowledged that the coastal regions experienced more rapid growth than the interior regions (Hasan et al., 2009; Zhang et al., 2012; Lee et al., 2015a,b). In addition, the risk management awareness of companies in the economically more developed coastal region is likely to be greater than of those in inland regions. This regional disparity should be accounted for in our analysis.



$$y_{it} = \alpha + \sum_{j=1}^3 \beta_j \text{IPO}_{t-j} + \beta_4 \text{IPO}_{t-n} + \delta_j [\text{EAE\_Dummy}_{i,t-1} * (\sum_{j=1}^3 \text{IPO}_{t-j} + \text{IPO}_{t-n})] + \gamma y_{i,t-1} + u_i + d_t + \varepsilon_{it} \quad (7)$$

Here, the independent variable of  $y_{it}$  includes some operating and financial variables after the listing. We use the above specification for all the independent variables. Moreover,  $\text{IPO}_{t-j}$  are several dummy variables equal to one if year  $t-j$  is the IPO year;  $\text{IPO}_{t-n}$  is a dummy variable equal to one if the IPO took place more than three years before;  $y_{i,t-1}$  is the control variable; and  $u_i$  and  $d_t$  are firm-specific and calendar year-specific effects, respectively. In order to fix a firm-specific effect, Eq.s (6) and (7) include the stock exchange, industry and region dummy variables. Lastly,  $\text{EAE\_Dummy}_{it}$ , the key variable, equals 1 if the excess administrative expenses of company  $i$  are more than 0 in year  $t$  and 0 otherwise.

### 3.4. Sources of data and descriptions

This paper investigates the determinants and consequences of going public for Chinese private companies during the process of China's reforms and opening up over the period 2006–2014. We utilize three main data sources for this study. First, balance sheets, income statements and reports on the disclosure information of listed and non-listed companies mainly come from the Oriana database provided by Bureau van Dijk. Information drawn from the Oriana database includes cash, fixed assets, total assets, long-term debt, loans, operating income, expenditure on R&D, ROA, return on equity (ROE), earnings before interest and taxes divided by total assets (EBITA), financial leverage, company age, company location, number of employees, and so on. Second, income statements, cash flow statements and IPO information of listed companies come from the RESSET database ([www.resset.cn](http://www.resset.cn)). Information of listed companies drawn from RESSET includes capital expenditure, administrative expenses, cash inflow from operating activities, investing activities and financing activities, market to book ratio, and IPO information. Third, the basic information on private listed companies comes directly from the CSMAR database provided by GTA. Data include whether the company is private, IPO time and the method of privatization.

Before proceeding with the estimation of our model, the key issue is the selection and matching of samples. Previous studies such as Pagano et al. (1998), Ritter and Welch (2002) and Piotroski and Zhang (2014) generally face the difficulty of a lack of data for non-listed firms when they examine the determinants of IPO decisions. These research designs critically depend upon their ability to identify a sample of non-public companies that are qualified to engage in an IPO on China's stock exchanges (Piotroski and Zhang, 2014). To identify this sample and match listed and non-listed companies, we utilize the following two selection procedures.

The first is to identify the private listed companies. From December 31, 1990–2014, 1,566 private companies went public in China's Shanghai and Shenzhen stock exchanges only including A shares. China's private listed companies are classified as private companies listed directly and state-owned companies that are privatized. Among these, 1,218 private companies are directly listed. In this paper, we select 884 directly listed private companies from 2006 to 2014. The second is to match non-listed private companies and listed companies. The key for matching is to identify the sample of firms that are financially eligible to engage in an IPO transaction during the period 2006–2014.

- (a) Active and private limited liability companies (451,041).
- (b) Continuing operations, with financial statements in the last eight years (24,247).
- (c) Financially eligible (the currency is Renminbi, RMB, in this paper).<sup>3</sup>
- (d) Select companies belonging to the industry of mining, manufacturing, wholesale and retail, construction, and real estate.<sup>4</sup>
- (e) In accordance with industry, size, number of companies, and matching non-listed and listed companies (total 1,168; each 584).

To process the data, we delete data from companies with incomplete financial data and calculate the lag time value and growth rate. In order to avoid extreme values, we further exclude the 1 % distribution of the two tails. Table 1 presents the descriptive statistics for the sample characteristics in our analysis. Several findings are worth noting. First, companies spend excess administrative expenses for rent-seeking activities. The mean value of EAE is 0.030, which implies that a 1 unit increase in expected administrative expenses raises excess administrative expenses by 0.030.<sup>5</sup> Second, the mean of actual company age since founding is 11.05 years, indicating that Chinese private companies are as a whole young. To gain further insights into the impact of IPOs, Figs. 1 and 2 exhibit the mean values of some relevant financial indicators before and after the IPO. They show that the performance in terms of ROA, MARGINA, ROE and EBITA declines after the IPO, while other variables such as TA, CF and CE go up after the IPO. In addition, the mean value of LEVERAGE comes down 18.446 percentage points compared with before the IPO.

<sup>3</sup> Average annual operating income is not less than 50 million. Owner's equity (net assets) is not less than 20 million. Every year does not show a loss; average annual net profit is not less than 5 million.

<sup>4</sup> According to the Guidelines for the Industry Classification of Listed Companies from CSRC (2012 Revision), Chinese private listed companies mainly belong to these categories.

<sup>5</sup> Because EAE equals the logarithm of the ratio of actual administrative expenses divided by expected administrative expenses, we calculate  $\text{EXP (EAE)}-1 = 0.030$ .

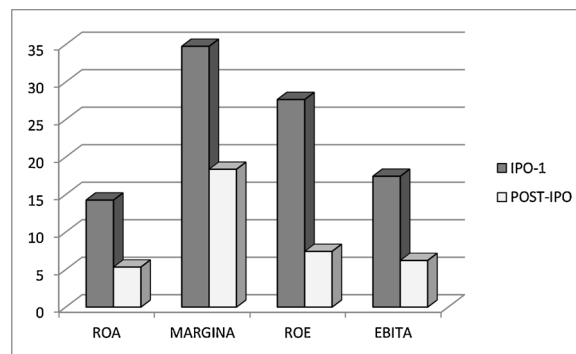
**Table 1**

Summary statistics of the variables.

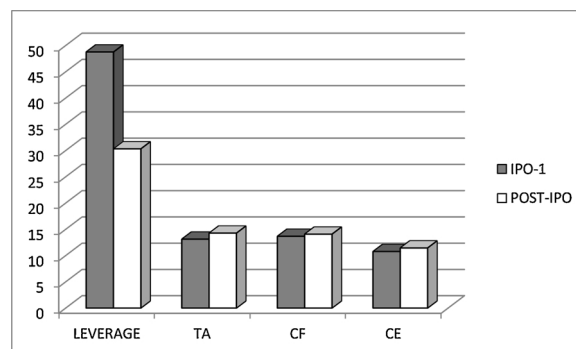
Source: Calculated based on the Bureau Van Dijk-Oriana database.

	Mean	Max	Min	Std. Dev.	Obs.
EAE	0.030	0.250	-0.151	0.068	3959
SIZE	13.074	18.154	3.466	1.045	5765
CAPEX	82.248	29311.49	-293.261	584.418	5541
GROWTH	52.916	75118.64	-99.997	1044.068	5548
ROA	10.219	99.937	-38.753	11.107	5632
LEVERAGE	44.653	153.315	-3.706	22.301	5764
MTB	2.171	5.696	0.985	0.722	5840
AGE	2.403	7.607	0.000	0.4983	5821

Notes: EAE equals the logarithm of the ratio of the actual administrative expenses divided by expected administrative expenses. SIZE is the logarithm of operating revenues, which are used as the proxy variable for company size. CAPEX is the growth rate of capital expenditures over property plant and equipment. GROWTH is the growth rate of operating revenues. ROA is the value of net income divided by total assets. LEVERAGE is the ratio of the book value of total debts divided by total assets. MTB is the ratio of market value to book value. AGE is the logarithm of company age. The currency unit is thousand RMB. The sample period is from 2006 to 2014.

**Fig. 1.** Change of firm performance before and after IPO.

Notes: ROA refers to the ratio of net income divided by total assets. ROE is the ratio of net income to equity. MARGINA is the ratio of operating margin divided by total assets. EBITA is earnings before interest and taxes divided by total assets. The term 'IPO-1' means the year before the IPO, while the term 'POST-IPO' denotes after the IPO.

**Fig. 2.** The change in four financial variables before and after IPO.

Note: TA means total assets. CF is cash flows. CE is capital expenditures. LEVERAGE refers to the ratio of assets to liability. The term 'IPO-1' means the year before the IPO, while the term 'POST-IPO' denotes after the IPO.

## 4. Results

### 4.1. The determinants of going public

In this section, we present and discuss our empirical results for the determinants of going public for Chinese private companies. Table 2 presents the maximum likelihood estimates of the probit model. The results indicate that the likelihood of IPO is affected by SIZE, LEVERAGE, MTB, and AGE, which is consistent with the findings of Pagano et al. (1998), who note that size, financial leverage and the market to book ratio are important determinants of going public. Not surprisingly, larger size firms are more likely to

**Table 2**

The determinants of going public.

Source: Calculated based on the Bureau Van Dijk-Oriana database.

Variable	(1)		(2)	
	Coefficient	P-value	Coefficient	P-value
CONSTANT	-3.1124***	0.0000	-0.8187	0.2087
EAE			13.7968***	0.0000
SIZE	0.2328***	0.0000	0.1028**	0.0287
CAPEX	-0.0003	0.1494	-0.0004	0.1576
GROWTH	-0.0002	0.6993	0.0009	0.1011
ROA	0.0008	0.7699	0.0010	0.7447
LEVERAGE	-0.0109***	0.0000	-0.0063***	0.0085
MTB	0.2415***	0.0000	-0.1308**	0.0473
AGE	-0.4738***	0.0000	-0.6833***	0.0000

Notes: This table presents selected coefficients from estimations of the probit models (1) & (2). The sample period is from 2006 to 2014. The dependent variable is  $\Pr(\text{IPO}_{it} = 1)$ . In total, 2234 observations are included. \*\*\*, \*\* and \* denote significance at the 1 %, 5 % and 10 % levels, respectively.

undertake an IPO. From the ‘adverse selection’ and ‘fixed cost’ perspectives, the adverse selection cost is a more serious obstacle to the listing of small companies (Chemmanur and Fulghieri, 1999; Ritter, 1987). Another possible reason relates to reputation. Given that small companies find it hard to become well known, there is a greater cost in selling their equity to the public (Chemmanur and Fulghieri, 1999). However, by using Chinese companies’ data over a different sample period, 2001–2008 (our sample is 2006–2014), Piotroski and Zhang (2014) discover that the relation between size and IPO listing decisions is negative.

In theory, more indebted companies have a higher probability of going public in order to overcome their financial constraints. However, the evidence reveals that firms with less debt are more likely to make an IPO due to the financial leverage effect. In China, the reason for going public comes from another direction, which may be attributed to the competition among companies. Different from the financing order theory, China’s private companies tend to rely on debt financing and external equity financing in order to enhance further development (Gregory et al., 2001; Xu and Guan, 2004). Accordingly, if debt financing cannot meet their funding demands, private companies will have a greater incentive to go public (Tong and Green, 2005).

Regarding the age effect, company age unexpectedly also has a negative impact on the likelihood for an IPO. This result contradicts the ‘pecking order’ hypothesis for making IPOs, whereby the youngest companies only succeed at an IPO after the older firms are already listed. This result suggests that young firms are more likely to go public, which may be attributed to the recognition effect. Young firms would have more incentive to go public in order to gain investors’ recognition. In the case of China, the average age of firms going public is 11 years, echoing the findings of Song et al. (2014), who investigate the IPOs of 948 Chinese firms between 2006 and 2011. This phenomenon implies that many startup firms in China choose to go public in order to get financing, which is in direct contrast to the 33 years it takes for companies in Italy and even 40 years for firms in Europe to go public (Rydqvist and Högholm, 1995; Pagano et al., 1998).

As to the market-to-book ratio, consistent with Pagano et al. (1998), who examine an Italian sample, and Piotroski and Zhang (2014), who observe Chinese firms, we find that it has a positive relationship with the probability of an IPO. Therefore, the *window of opportunity hypothesis* is supported (Zingales, 1995). However, the coefficients of capital expenditure, growth rate and ROA are not statistically significant. This reflects that IPO determinants in China are quite different from those of developed countries. The public choice theory is hence proven to be unsuitable for transition countries such as China.

The second regression in Table 2 adds the variable of excess administrative expenses (EAE) measuring a firm’s rent-seeking activities. The coefficient of EAE, as expected, is statistically significantly positive at the 1 % level. When focusing on the distribution of subsidies in China, Du and Mickiewicz (2016) find that expenditures spent on rent-seeking have a significant and positive effect on profitability. Our findings show that a higher level spent on rent-seeking leads to a greater possibility of an IPO. In other words, entrepreneurs in countries like China with a “non-transparent government” are more likely to spend time and resources on influence (rent-seeking) activities rather than on productive business activities. As for other control variables, most results remain unchanged, except the coefficient of the market-to-book ratio, which switches from positive to negative. This result illustrates that after accounting for rent-seeking behavior, firms with lower growth potential are more likely to go public. In other words, due to the existence of rent-seeking activities, firms with lower growth potential have more opportunities to go public in order to overcome their financial constraints.

In order to further identify whether there is a different impact for listed and non-listed companies on rent-seeking activities, we present Table 3. The coefficients of  $(\text{LIST\_Dummy}_{it} * \text{EAE}_{i,t-1})$  and  $[(1 - \text{LIST\_Dummy}_{it}) * \text{EAE}_{i,t-1}]$  are 0.0223 and -0.0224, respectively, and both are significant at the 10 % level, suggesting that listed private companies engage more in rent-seeking activities than non-listed private companies after controlling for other factors. Previous studies have shown that private companies have a greater incentive to engage in rent-seeking activities in countries with weak institutions, such as a poorer legal system, higher corruption, and poorly defined property rights (Chen et al., 2005; Faccio, 2006; Luo and Ying, 2014). Although listed private companies face increased disclosure and regulatory requirements, listed companies still have a strong incentive to carry out rent-seeking activities.



**Table 3**  
Impact of listing on rent-seeking activities.  
Source: Calculated based on the Bureau Van Dijk-Oriana database.

Variable	(1)	(2)
CONSTANT	−0.0251***	−0.0251***
LIST_Dummy <sub>it</sub> *EAE <sub>i,t−1</sub>	0.0223*	
(1 − LIST_Dummy <sub>it</sub> )*EAE <sub>i,t−1</sub>		−0.0224*
EAE <sub>i,t−1</sub>	0.2418***	0.2642***

Notes: The sample period is from 2006 to 2014. The dependent variable is EAE<sub>it</sub>. Total panel unbalanced observations are 3418. Effects specification: Cross-section fixed dummy variables and period fixed dummy variables. \*\*\*, \*\* and \* denote significance at the 1 %, 5 % and 10 % levels, respectively.

#### 4.2. Analysis of the consequences of going public

In this section, we present and discuss our empirical results regarding the consequences of going public and the relationship between rent-seeking activities and the performance of Chinese private companies after the IPO.

##### 4.2.1. The use of the capital from the IPO

In order to examine the determinants and motivation of going public, we use both ex ante and ex post information on companies' characteristics and performance. Thus, we explore the use of the capital raised in the equity offering to infer the motivation for an IPO (see Pagano et al., 1998; Kim and Weisbach, 2008).

To examine the use of the capital raised in the IPO, we estimate Eq. (4) from Section 3. The dependent variable for asset-based variables (total assets, inventory and cash) is  $Y = \ln \left[ \left( \frac{V_t - V_0}{\text{total assets}_0} \right) + 1 \right]$ , and that for expenditures (CAPEX, R&D, reduction of long-term debt and loans) is  $Y = \ln \left[ \left( \sum_{i=1}^t V_i / \text{total assets}_0 \right) + 1 \right]$ . Independent variables are primary capital and other sources of funds, both of which are normalized by total assets in the IPO year, and  $\ln[\text{total assets}_0]$ .

Table 4 presents the estimates of an equation predicting changes in each of the seven EAE accounting variables using the specification

**Table 4**

The uses of the capital raised in the IPOs.

Source: Calculated based on the Bureau Van Dijk-Oriana, CSMAR and RESSET databases.

Variable	t	$\beta_1$	P-value	$\beta_2$	P-value	Test for $\beta_1 = \beta_2$
$\Delta$ Total Assets	1	0.0066	0.7986	0.0028	0.8081	0.9017
	2	−0.0349	0.4534	−0.0020	0.9106	0.5474
	3	−0.0935	0.1893	0.0074	0.7759	0.2323
$\Delta$ Inventory	1	0.0124	0.2059	−0.0021	0.6377	0.2145
	2	0.0061	0.6806	−0.0029	0.6157	0.3235
	3	0.0007	0.9769	−0.0057	0.5034	0.8180
$\Delta$ Cash	1	−0.0485	0.0632	0.0011	0.9263	0.1098
	2	−0.0735	0.0664	−0.0149	0.3340	0.2122
	3	−0.0407	0.4256	−0.0041	0.8255	0.5457
ECAPEX	1	0.2622***	0.0000	0.1134***	0.0000	0.0115***
	2	0.3555***	0.0000	0.1649***	0.0000	0.0000***
	3	0.3949***	0.0000	0.2138***	0.0000	0.0002***
ER&D	1	−0.0003	0.9165	0.0004	0.7182	0.8229
	2	0.0007	0.8894	0.0005	0.8185	0.9657
	3	−0.0015	0.8732	0.0024	0.4816	0.7256
ELT Debt Reduction	1	−0.0068	0.6204	0.0064	0.2970	0.4187
	2	0.0135	0.7089	−0.0038	0.7868	0.6841
	3	0.0538	0.3212	−0.0348	0.0792	0.1688
ELoan Reduction	1	−0.0126	0.5093	−0.0152	0.0750	0.9087
	2	0.0178	0.6315	−0.0124	0.3900	0.4886
	3	0.0953	0.1534	−0.0061	0.8039	0.2004

Notes: This table presents selected coefficients from the estimations of Eq. (5). The dependent variable for asset-based variables (total assets, inventory and cash) is  $Y = \ln[(V_t - V_0 / \text{total assets}_0) + 1]$ , and that for expenditures (CAPEX, R&D, reduction in long-term debt, or reduction in loans) is  $Y = \ln[(\sum_{i=1}^t V_i / \text{total assets}_0) + 1]$ . Independent variables are primary capital and other sources of funds, both of which are normalized by total assets, and  $\ln[\text{total assets}_0]$ . The seventh column is the P-value of diagnosis on  $\beta_1 = \beta_2$  by the Wald test. \*\*\*, \*\* and \* denote significance at the 1 %, 5 % and 10 % levels, respectively. The sample period is from 2006 to 2014.

**Table 5**

Effects of the decision to go public.

Source: Calculated based on the Bureau Van Dijk-Oriana, CSMAR and RESSET databases.

Variable	LEVERAGE	TA	CF	CE
CONSTANT	2.0999	4.4537***	3.2616***	6.5981***
IPO <sub>t-1</sub>	4.2923***	0.0956***	-0.2396*	0.4368**
IPO <sub>t-2</sub>	8.1865***	0.2190***	0.0528	0.3398
IPO <sub>t-3</sub>	10.7989***	0.4118***	0.2744*	0.2416
IPO <sub>t-n</sub>	13.1004***	0.6081***	0.6725***	0.2457
LEVERAGE <sub>IPO-1</sub>	0.6868***			
TA <sub>IPO-1</sub>		0.7188		
CF <sub>IPO-1</sub>			0.7900***	
CE <sub>IPO-1</sub>				0.4395***
Obs.	2,733	2,733	278	278

Notes: This table presents selected coefficients from the estimations of Eq. (6). The dependent variables are asset liability ratio (LEVERAGE), the logarithm values of total assets (TA), cash flow (CF), and capital expenditures (CE), respectively. \*\*\*, \*\* and \* denote significance at the 1 %, 5 % and 10 % levels, respectively.

of Eq. (5). The first column includes seven accounting variables, whereas the second column presents time  $t = 1, 2, 3$  after the IPO. The third and fourth columns are the coefficient of primary capital raised in the IPO ( $\beta_1$ ) and the corresponding P-value, respectively. The fifth and sixth columns are the coefficient of other source of capital ( $\beta_2$ ) and the corresponding P-value, respectively. The seventh column is the P-value of coefficient diagnosis on  $\beta_1 = \beta_2$  by the Wald test. Obviously, we find that capital raised in the IPO is mainly used for capital expenditures.

The results in Table 4 indicate three important implications. First, compared with other uses of funds raised from IPOs, substantially more of the money is used for investment. Second, the coefficients on IPO capital are larger than the corresponding coefficients for other sources of capital, implying that the funds raised from IPOs are more likely to be used for capital expenditures than internally generated funds. Third, capital expenditures sourced from IPOs increase year by year, which suggests the main impact of going public on capital expenditures.

Pagano et al. (1998) reveal that investments do not increase following a firm's IPO, indicating that demand for capital is not a major reason to go public for Italian companies, as they find that capital raised from IPOs tends to be used to pay off long-term debts. In contrast to this and in line with Kim and Weisbach (2008), we find that capital raised from IPOs for Chinese private listed companies tends to be used for capital expenditures. Altogether, the results in this section suggest that demand for capital is a major reason to go public for Chinese private companies.

#### 4.3. The impact of the IPO on some financial variables

Table 5 reports the effects of IPOs on some financial variables. The dependent variables are the asset liability ratio (LEVERAGE), the logarithm values of total assets (TA), cash flows (CF), and capital expenditures (CE). According to Table 5, we find that IPOs have significantly positive impacts on the asset liability ratios and total assets. For the asset liability ratios, the coefficients of the first, second, third, and more years after the IPOs are 4.292, 8.186, 10.799, and 13.100, respectively. For the total assets, the coefficients of the first, second, third, and more years after the IPOs are 0.096, 0.219, 0.412, and 0.608, respectively. This shows that LEVERAGE and TA gradually increase significantly after the IPO for Chinese private listed companies. The results are significantly different from Pagano et al. (1998), who find that Italian companies reduce their leverage and investment after the IPO.

#### 4.4. The impact of the IPO on firm performance

Table 6 presents the effects of IPOs on financial performance – namely ROA, MARGINA, ROE and EBITA, respectively. We find that the effects of IPOs are different for various performance variables. The coefficients of IPO<sub>t-2</sub>, IPO<sub>t-3</sub>, and IPO<sub>t-n</sub> for the ROA variable are negative and significant and decrease gradually (from -0.449 to -1.594). The coefficients of IPO<sub>t-1</sub>, IPO<sub>t-2</sub>, IPO<sub>t-3</sub>, and IPO<sub>t-n</sub> for the EBITA variable are also significant and decrease gradually (from -0.827 to -1.565). Thus, our study adds evidence to the literature on IPOs' long-run underperformance for the case of China (Ritter, 1991; Loughran, 1993; Levis, 1993; Espenlaub et al., 2000; Hertz et al., 2002; Schultz, 2003). IPO underperformance is widely debated, because it may indicate an inefficient allocation of resources, investor sentiment, arbitrage opportunities, etc. Feng and Johansson (2015) find that IPO firms with high residual funds have significantly better stock returns and operating performance than those with low residual funds. However, the coefficients of IPO<sub>t-1</sub>, IPO<sub>t-2</sub>, IPO<sub>t-3</sub> and IPO<sub>t-n</sub> for the MARGINA variable are positive and significant and increase gradually (from 0.889 to 4.137). The coefficients of IPO<sub>t-1</sub>, IPO<sub>t-2</sub>, IPO<sub>t-3</sub> and IPO<sub>t-n</sub> for ROE are not significant.

Table 7 presents selected coefficients from the estimation of Eq. (7). Apart from adding the dummy variables, the others are the same as those of Eq. (6). We report the major results below. First, we find that the effects of IPOs on firm performance are mostly significantly negative. This result is consistent with many previous studies – see Ritter (1991), Loughran (1993), Levis (1993), Rajan and Servaes (1997), Brav et al. (2000), Espenlaub et al. (2000), Hertz et al. (2002), Ritter and Welch (2002), Schultz (2003), Chi and Padgett (2005), Chemmanur et al. (2010), Dong et al. (2011), etc. Second, the coefficients of (IPO<sub>t-x</sub> \*EAE\_DUMMY) ( $x = 1, 2, 3$ ,

**Table 6**

Impact of the decision to go public on company performance.

Source: Calculated based on the Bureau Van Dijk-Oriana, CSMAR and RESSET databases.

Variable	ROA	MARGINA	ROE	EBITA
CONSTANT	5.7219***	13.4791***	9.9660***	8.6392***
IPO <sub>t-1</sub>	-0.4490	0.8893*	-0.0054	-0.8270***
IPO <sub>t-2</sub>	-0.9773***	2.2728***	-0.6395	-1.0192***
IPO <sub>t-3</sub>	-1.3008***	3.1874***	-1.0741	-1.2332***
IPO <sub>t-n</sub>	-1.5949***	4.1373***	-1.1868	-1.5653***
ROA <sub>IPO-1</sub>	0.1898***			
MARGINA <sub>IPO-1</sub>		0.3091***		
ROE <sub>IPO-1</sub>			0.1069***	
EBITA <sub>IPO-1</sub>				0.1407***
Obs.	2,732	2,740	2,732	2,733

Notes: This table presents selected coefficients from the estimations of Eq. (6). The sample period is from 2006 to 2014. The dependent variables are ROA, MARGINA, ROE and EBITA, respectively. \*\*\*, \*\* and \* denote significance at the 1 %, 5 % and 10 % levels, respectively.

**Table 7**

Impacts of rent-seeking activities on firm performance.

Source: Calculated based on the Bureau Van Dijk-Oriana, CSMAR and RESSET databases.

Variable	ROA	MARGINA	ROE	EBITA
C	7.5182***	20.2439***	13.1177***	10.2217***
IPO <sub>t-1</sub>	-1.4099**	-1.0169	-1.3532	-1.3562*
IPO <sub>t-2</sub>	-3.0966***	-0.5726	-4.5069	-2.6057***
IPO <sub>t-3</sub>	-2.9644***	0.6764	-4.0770	-3.4228***
IPO <sub>t-n</sub>	-2.9523***	3.6614***	-0.2833	-2.8095***
IPO <sub>t-1</sub> *EAE_DUMMY	1.4883***	3.2354***	2.2879	1.9343***
IPO <sub>t-2</sub> *EAE_DUMMY	2.9518***	4.6647***	5.4788***	3.2082***
IPO <sub>t-3</sub> *EAE_DUMMY	2.1309***	4.1266***	3.9526*	3.6811***
IPO <sub>t-n</sub> *EAE_DUMMY	2.3621***	3.3645***	-0.3067	3.1665***
ROA <sub>IPO-1</sub>	0.1824***			
MARGINA <sub>IPO-1</sub>		0.2534***		
ROE <sub>IPO-1</sub>			0.0929**	
EBITA <sub>IPO-1</sub>				0.1241***
P-value	0.000	0.000	0.000	0.000
Obs.	2,384	2,391	2,384	2,385

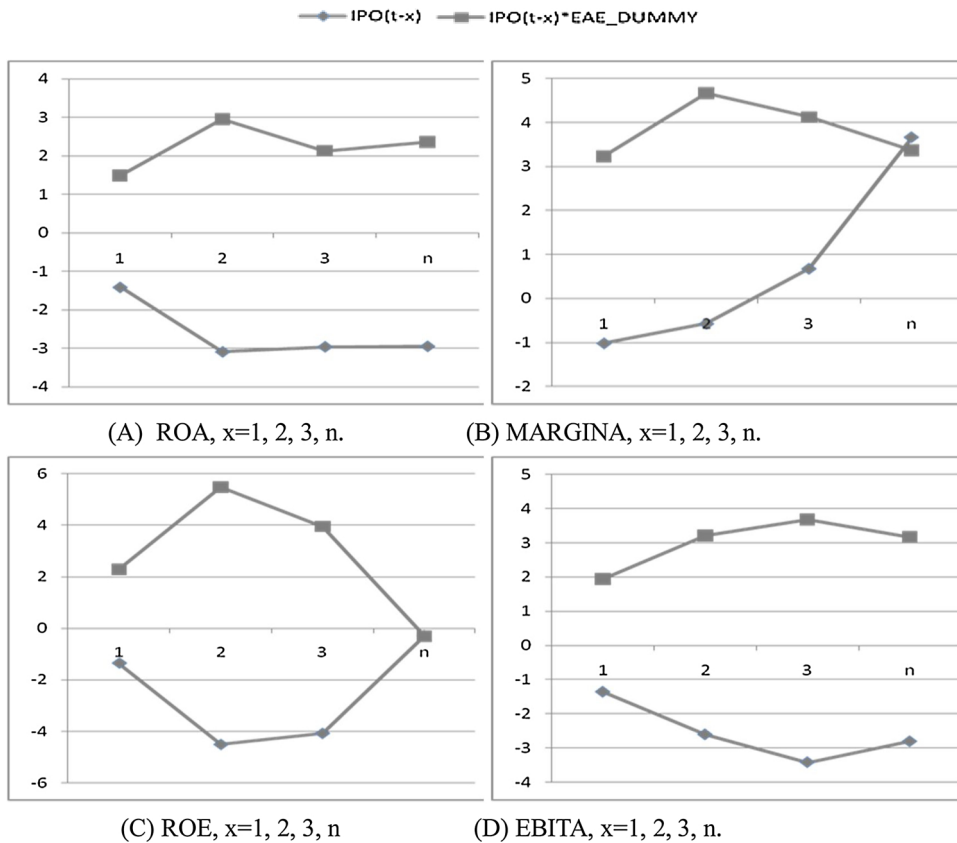
Notes: This table presents selected coefficients from the estimations of Eq. (7). The sample period is from 2006 to 2014. The dependent variables are ROA, MARGINA, ROE and EBITA, respectively. \*\*\*, \*\* and \* denote significance at the 1 %, 5 % and 10 % levels, respectively. The second row from the bottom is the P-value of coefficient equality diagnosis by the Wald test.

n) for performance variables are almost all significantly positive. Since the decision to go public has a negative impact on the performance of Chinese private companies, a higher level of rent-seeking activities after the IPO will improve their performance (see Fig. 3). This result is consistent with the findings of Du et al. (2010). Third, the maximum value of the coefficients of (IPO<sub>t-x</sub>\*EAE\_DUMMY) (x = 1, 2, 3, n) occurs in the second or third year after the IPO, and the values in the fourth and later years are not the maximum, suggesting that the effects of rent-seeking activities on long-term performance exhibit a downward trend. This result is consistent with Du et al. (2010). Our evidence also supplements Aharony et al. (2000), who present a sample of 83 Chinese state-owned enterprises' IPOs between 1992 and 1995 issuing shares to foreign investors (so-called B-share or H-share), who find that the Chinese IPO firms engage in earnings management.

Our results in this section overall support IPOs having a negative impact on firm performance, while the rent-seeking activities of Chinese private companies after IPO have a positive impact on their performance. We also find that IPOs have a significantly positive impact on the asset liability ratios and total assets of Chinese private listed companies.

## 5. Conclusions and implications

This paper investigated the determinants and consequences of going public for Chinese private companies during the process of China's reforms and opening up over the period 2006–2014. Our empirical work contributes to the literature in several ways. First, previous studies have focused on the consequences of IPOs covering only the pre-IPO period due to data limitations. We supplement previous empirical studies by examining the determinants and consequences of going public for Chinese private companies and find that the likelihood of an IPO is positively affected by the firm size and market-to-book ratio of the corresponding industry and negatively related with leverage and company age. However, the coefficients of capital expenditure, growth rate and ROA are not statistically significant. This reflects that the IPO determinants in China are quite different from those of developed countries, proving that the public choice theory is not suitable for these types of transition countries.



**Fig. 3.** The change of the impact of IPOs and rent-seeking activities on performance.  
 Note: The dependent variables are ROA, MARGINA, ROE and EBITA, respectively.

Second, our findings extend the literature on the impact of rent-seeking activities by Chinese private companies on the probability of their IPO. Evidence shows that a higher level of rent-seeking expenditures leads to a greater possibility of an IPO. When considering the role of rent-seeking activities, the coefficient of the market-to-book ratio switches from positive to negative. After accounting for rent-seeking behavior, firms with lower growth potential are more likely to go public. Although facing more stringent regulations and more information disclosure, the rent-seeking activities of Chinese private companies do not decrease. Our results indicate that listed companies are more likely to carry out rent-seeking activities than non-listed ones, and the extent of their rent-seeking activities is greater than that of non-listed companies after controlling for other factors. Our results also complement the findings of [Du et al. \(2012\)](#) concerning the positive effect of political connections on the post-IPO performance of Chinese private listed companies.

It is also worth mentioning that our findings provide some important policy implications. First, although achieving impressive economic growth during the period of economic reforms, China has been plagued by rampant corruption ([Wu and Huang, 2008](#)). Rent-seeking activities have an influential role, as proven above, exactly because of this corruption. In order to encourage private entrepreneurship to develop further, more competitive and equal access to productive resources through reform is also needed, which could promote more fruitful entrepreneurship and help reduce rent-seeking activities ([Chu and Song, 2015](#)). Second, political connections are very important in China, and so firms actively look for ways to build political networks, including engaging in corporate social responsibility ([Jiang and Kim, 2015](#)). While the legal environment is still weak, it is improving. China could thus develop a stronger legal environment in order to protect investors and supervise enterprises. Finally, the existing company listing system must be reformed to give private companies equal access to a chance to be listed. Moreover, China should further strengthen the supervision of listed companies.

Although this paper examines the determinants and consequences of going public and the impact of rent-seeking activities on the performance of Chinese private companies, some questions remain unsolved. The phenomenon of IPO underpricing is prevalently documented in the finance literature ([Ritter and Welch, 2002](#); [Celikyurt et al., 2010](#); [Chen et al., 2017](#); [Gupta et al., 2018](#); [Jog et al., 2019](#)). Since investors are less informed than issuers about the true value of the companies, this information asymmetry determines the magnitude of the underpricing needed to sell shares ([Rock, 1986](#); [Pagano et al., 1998](#)). In this regard, it is also interesting to know

whether and how these contributing factors affect IPO underpricing.<sup>6</sup> This extension might be interesting and worth analyzing in future research.

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