



The empirical research of the selection of listing location in Chinese companies

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ABSTRACT

This paper selected the financial indicators of Chinese listed companies both overseas listing and domestic listing during 2011 and 2012, Using Probit model to study the impact the growth ability, financial leverage, the company size, profitability, cashability has on the chosen of companies' listing location. Results show that the company scale, cashability and profitability significantly related to companies' listing location. Then, we use treatment effect model to analyze the profitability of listed companies before and after listing, the results show that after the overseas listing, enterprises have the relative advantage in profitability under 5% significant level. This showed that overseas listing is beneficial to the development of corporate profitability.

Key words: Listing Location; Probit Model; Profitability; Treatment Effect Model

INTRODUCTION

Corporate finance is not only an important issue in financial research but also a long-standing problem for Chinese enterprises. China securities regulatory commission published a trial list of initial public offering enterprises. Till November 14, 2013, two of China's securities market got 761 companies on the waiting list, so the high demand for corporate financing is easily noticed.

Among them, direct financing through the securities market is one of the most important choices for companies. As financial transactions and international capital flows are becoming blurred on boundaries and regions, more companies choose to list abroad considering the needs of the transnational capital. This kind of phenomenon is due to the globalization of capital markets and the wide use of information technology. To take the US market as an example, even though it is frequently blamed and shorted by local research institutions in recent years, still many companies hope to list in it. The United States share prices generally rose during the second half of this year, many companies handed out prospectus to the SEC recently, and in addition, touch technology, 5 million lottery, Thunder, and 3G portal etc. have already start planning to come into the market.

Through the facts above, we want to know the reason why Chinese companies choose overseas listing from their perspective, and what kind of impacts will overseas listing have on them directly or indirectly? Further researches on these issues can not only make us clearly recognize the importance of capital markets selection but also give the companies some practical guidance.

Some scholars have already made a large number of achievements in related fields: market segmentation theory and investor cognitive theory (Foerster, Karolyi, 1999) [1], investor protection theory (Stulz, 1999) [2], liquidity hypothesis (Amihud, 1986) [3]. Meanwhile, La Porta, Shleifer & Vishny (2000) [4] also found that the stock value will be relatively low in the countries which stay in low standards of investor protection. This supports the theory of investor protection. Sarkissian, Schill (2003) [5] found that the degree of similarities of economics, geography, industry and culture plays a significant role in the overseas listing selection. These scholars mainly focuses on the entire macro stock market extending researches to the legal aspect and and making them deep and wide.

In China, Cui Yuanmiao (2004) [6]'s study indicated Chinese enterprises which chose overseas listing pay more attention to the needed principal, rather than their financial funding liquidity, technological level or market reputation.. Lan Chunhua (2008) use Logistic regression model to get the result that small companies chose overseas listing mainly because its scale cannot reach the requirement. Jiang Yanhong, Peishu Hong (2010) chose 131 Chinese companies which listed in Chinese GEM and NASDAQ as samples, and the empirical results shows:

1. Companies with lower growth ability are more willing to go to the NASDAQ
 2. There is more reluctance for the companies which hold overseas market business before the list to go to the NASDAQ
 3. Social service enterprises are more likely to go to the NASDAQ.
- Qiu Xiaomin (2005) [7] compared the Hong Kong and U.S. Markets by using panel data, and concluded that there are no obvious relationships between investment and internal cash flow when listing in Hong Kong. This proved that the main motivation for the enterprises which listed in Hong Kong is financing and refinancing. Compared to other countries, Chinese scholars showed the weakness in empirical research.

The background of companies' selection of listing location

According to Marco Pagano, Ailsa A.Roell and Josef Zechner (2002) [8], companies' listing motive can be broadly summarized as financial and non-financial aspects. From the financial perspective, companies primarily listed for the more financial capital, the main reason for this aspect is that the corporate projects require a lot of money, so the companies want to raise money through the listing to meet their own needs for developing. Many Chinese companies are facing difficulties in financing, so researches about the selection of listing location which based on the financial aspects have a pivotal position; also, listed companies will consider the level of competitiveness of enterprises as companies can improve their reputation through listing, and in this way, the competitiveness of the company also be improved.

Table 1. Requirement of main listing market

	Profitability	Assets	Public shareholding
NASDAQ Market	No specific for the growing	4million or 2million net asset	1million shares or half
NASDAQ-NM	No specific for the growing	30million or 15million net asset	At least 400one with no less than 100shares
OBCTT	No requirement	No requirement	No requirement
New York Stock Exchange	2 million per year (USD) for the two year pre-tax profits before listing, 250 million for the previous year; Profit for three years, and the sum of 6.5 million (USD), the previous year pre-tax profit 4.5 million (USD) or more	40million tangible net worth	At least 2,000 shareholders with more than 100 shares; or 2,200 shareholders (listed on the first half of the average monthly trading volume of 10 million shares); or 500 shareholders (before listing an average monthly trading volume of 100 million shares); At least 1.1 million public shares.
Hongkong gem	No requirement	Active in main business	More than 25% of the total share capital
Main board of Hongkong	reach 30 million (HKD) earnings in the previous two years and 20 million in the most recent year	2 years of active service, can be reduced to 1 year if the market value is over 500 million (HKD)	required to meet 25% of the total share capital if Market capitalization is less than 4 billion, otherwise can be reduced to 20%
China's main board	1.more than 30 million (CNY) net profit in the first three fiscal years; 2. more than 50 million operating net cash flow in the first three fiscal years or more than 300 million operating incomes in the first three fiscal years.	The intangible asset in the previous period is less than or equal to 20% of the total assets.	More than or equal to 50 million (CNY) company shares; No less than 3000 shares before the issuance; public float hold at least 25% of the total share capital; When issued, the proportion of the issued shares can be reduced when it's over 400 million, use 10% as the bottom line.
China's chinext	The earning continue rising in the first two years with over 10 million(CNY) net profits; or with no less than 5 million(CNY) net profit and 50 million(CNY)revenues in the first year and the revenue growth rate reach to 30% in the first two years.	Equal or more than 20 million net assets in the previous period with no existence of loses to be covered.	More than 25% shares of the total shares of the Company; proportion of shares in the public should exceed 10% when the offering of total share capital is more than 400 million (CNY);

However, since china's policy factors works obvious, the Chinese market's listing system, the threshold and other related requirements should also be taken into account. From the perspective of the overall size of the stock market, the speed of domestic market's development is certainly fast, but there still have a considerable gap about overall size between china and other countries. According to this, China can only be issued in the stock implementation of standard control combined with the approval system which used to control the size for a long period of time in the

future. This is stricter when compared to other countries' foreign registration system and is considered as the main reason for causing the imbalance of supply and demand. What's more, the second board market is not covering the entire market, so smaller companies cannot be listed. However, the threshold is much lower and the listing standards are flexible in other countries, particularly in the second board market. The above table lists the conditions about list in the world's major markets, mainly focused on assets and profitability requirements, for reference.

EXPERIMENTAL SECTION

The sample selection and statistical analysis

The study sample is divided into two categories, domestic-listed companies and oversea-listed companies respectively, the finishing steps about the sample are as follows:

1) Sample finishing about Chinese domestic-listed companies. First use GTA database to select 437 Chinese companies which is listed domestic during 2011 and 2012 for the later descriptive statistics, and then use Flush securities information platform to find out their financial indicators in the annual report which is one year prior to the date of its listing, this can be used for the empirical part.

2) Sample finishing about Chinese overseas-listed companies. First use GTA database to select 80 Chinese companies which is listed abroad (including Hong Kong, China) during 2011 and 2012 for the later descriptive statistics, for the subsequent empirical research, we only got 62 companies' financial indicators after removed some missing data and this can be used for the empirical research.

We finished the following table according to the listed companies' data between 2011 and 2012:

Table 2. Summary of companies' listing location during 2011 and 2012

Stock Market	2011		2012	
	Quantity	Proportion	Quantity	Proportion
Shanghai Stock Exchange	39	12.26	26	13.06
Shenzhen Stock Exchange	243	76.41	129	64.82
Hongkong Exchange	19	5.97	33	16.58
The NASDAQ	7	2.2	1	0.5
New York Stock Exchange	9	2.83	0	0
Frankfurt Stock Exchange	1	0.31	7	3.51
Alternative Investment Market	0	0	3	1.5
Summary	318	100	199	100

As can be seen from Table 2, compared to 2011, the number of listed companies decreased in 2012, but the proportion is roughly the same except some slight fluctuates within a certain range. The overall situation of the listed companies remained relatively stable.

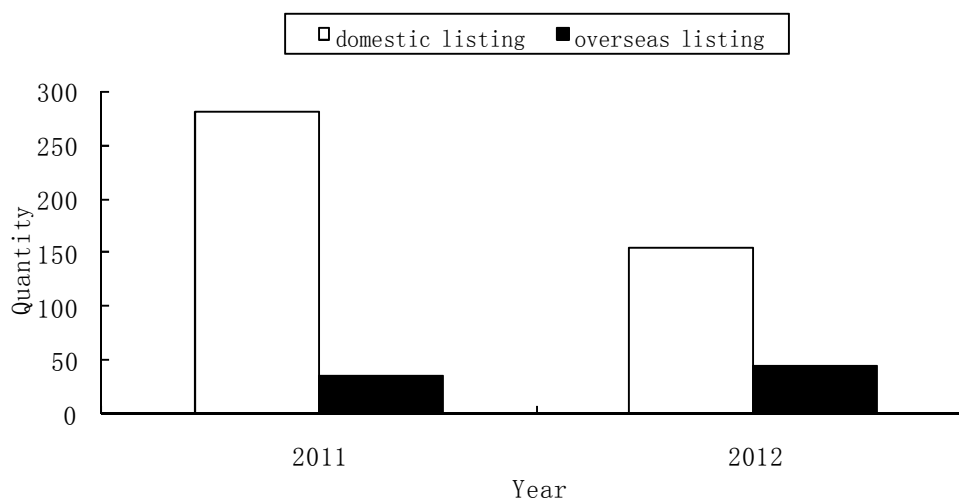


Fig.1. 2011-2012 the number of companies both domestic and overseas listing

As can be seen from Fig.1 which indicated the distribution about the number of listed companies, the number of domestic-listed companies in 2012 had a significant decline when compared to 2011 while the number of overseas-

listed companies is increased. The later can be explained by the more recognition which the overseas listed companies gained.

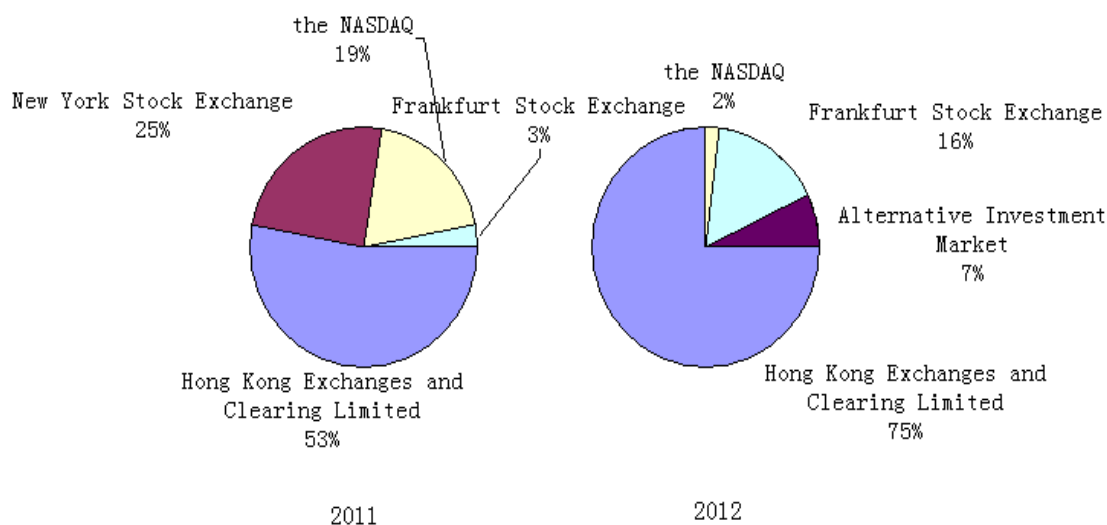


Fig.2. distribution of companies' overseas listing

As can be seen from Fig.2, Hong Kong is still the listing center for Chinese companies but the proportion has declined during 2012, more companies are willing to go public in the United States, such as: The NASDAQ, the New York Stock Exchange. In addition, there are also some other minor fluctuations in the stock exchange.

RESULTS AND DISCUSSION

The empirical study about listing motivation based on financial perspective

(a) Setting of dependent variable

We set up the type of companies' listing location as dependent variable, represented as the dummy variable b . If the company choose domestic listing then $b=0$, otherwise $b=1$.

(b) Selection of independent variable

In this paper, we made the conclusion through theoretical analysis that companies' listing is mostly determined by financial factors, and therefore we selected several capacity indicators which can basically reflect the financial institution. They are: the growth ability, financial leverage, the company size, profitability and cashability. According to financial management, we can use Increase rate of main business revenue, asset-liability ratio, cash ratio of total debt, Profit rate to net worth and the nature logarithm of the total assets to measure these capacity:

Gro: Increase rate of main business revenue, calculate as operating income in the current period changes accounted in the amount at the beginning of the period;

Lev: asset-liability ratio, ratio between total debt and total assets;

Liq: Cash ratio of total debt, ratio between net operating cash flow and the total liability at end of the year;

Pro: Profit rate to net worth, ratio between net assets and average total assets;

Size: natural asset size, the nature logarithm of the total assets at end of the year;

(c) The construction of binary choice model and our empirical results.

We use Probit model for empirical analysis, according to the selected variable, the model can be expressed as follow:

$$d = 1\{\beta_0 + \beta_1 Gro + \beta_2 Lev + \beta_3 Size + \beta_4 Liq + \beta_5 Pro + \varepsilon_i\}$$

Where $d = 0$ indicating the Chinese companies who choose domestic listing, $d = 1$ indicating the Chinese companies who choose overseas listing. Using STATA software to calculate as follows:

Table 3. The regression results of types of companies' listing location

d	dF/dx	Std. Err.	z	P> z
Gro	-5.21E-05	0.0006744	-0.08	0.938
Lev	-0.005366	0.0074237	-0.72	0.47
Size	-1.301117	0.1952126	-6.67	0
Liq	-0.07569	0.3099393	-0.24	0.807
Pro	-12.5272	2.354749	-5.32	0

We concerned about whether the $P > |z|$ value about this independent variables is less than 0.1 or not. Asset size and profitability can go through the significant test, and the coefficients are negative; while the other three ratio indicators are not significant.

The empirical study of changes in corporate profitability

We use change of the companies' profitability as dependent variable:

Y: change of companies' profitability, defined as the difference between the ROE data from year 2012 to the previous year;

Set companies' listing type as the independent variable:

B: company's listing type, if listed-abroad then $b=1$, otherwise $b=0$;

Using the growth rate of the market index as controlled variable:

Index: the growth rate of the market index. Use the closing price of May's industry index divided by the closing price of March's industry index for calculating to control the macroeconomic impact.

When considering whether the type of listing location can affect the profitability, we use treatment effect model. The expression of the model are as follows:

$$y = x\beta_0 + \alpha_0 d + v_1 \quad (\text{outcome equation})$$

$$d = 1\{w\delta_0 + v_2 > 0\} \quad (\text{decision equation})$$

There, $x \in R^p$, $w \in R^q$ are vectors which consisted by dependent variable, denoted z as the random vector which consisted by different elements in (x, w) , v_1 is the so called random disturbance and $E(v_1 | z) = 0$. The decision equation reflect the choice of internal mechanisms and typically contain a potential utility function: $U = w\delta_0 + v_2$. Among this, w is the factor which affect individual utility and can cover with X . $1\{\cdot\}$ is the indicative function.

Treatment effect model constructed as to avoid endogenous problem.. If only a single result equation be estimated, we will question the relationship about v_1 and d . This is because the individual disturbance factor v_2 existed in the potential utility function: $U = W \cdot \delta_0 + v_2$. it will affect the value of d , so we generally think v_1 and d are related, which produces endogenous problem.

Therefore, according to selected variables, the model in this study can be expressed as:

$$y = \beta_0 + Index \cdot \beta_1 + \alpha_0 \cdot b + v_1$$

$$b = 1\{\delta_0 + \delta_1 Gro + \delta_2 Lev + \delta_3 Size + \delta_4 Liq + \delta_5 Pro + v_2 > 0\}$$

Where $b = 0$ means that companies chose domestic listing, $b = 1$ means that companies chose overseas listing. Using STATA software to calculate as follows:

Table 4. The outcome of profitability changes

		Coef.	Std. Err.	z	P> z
y	index	0.1675899	0.066254	2.53	0.011
	b	0.0596741	0.035814	1.67	0.096
	_cons	-0.0746968	0.012094	-6.18	0
b	gro	0.0000889	0.000142	0.63	0.531
	lev	0.0000887	0.000412	0.22	0.83
	liq	0.271499	0.104041	2.61	0.009
	size	-0.7220268	0.104051	-6.94	0
	pro	-2.752441	1.330768	-2.07	0.039
	_cons	6.074538	1.141765	5.32	0

From the above results, in accordance with the 10% significance level, listed companies to choose the type can significantly affect the profitability and the coefficient is positive, which means companies listed abroad significantly improved Chinese companies' profitability.

CONCLUSION

In this paper, the empirical results showed that companies' selection of listing location was mainly affected by the domestic market policy. Chinese companies probably have few choices but to list overseas. Since Chinese stock market uses approval system, with strict access system, the related requirements about profit and threshold stays at higher level. Chinese market established a strict time and profit limit and this cause some companies which cannot meet the scale and profit requirement but with fine growth ability or in urgent need of money to break through the bottleneck of the development to turn to overseas markets. Compared with the Chinese market, other markets pay more attention to business development capabilities and information disclosure, than profitability. Without excessive requirements of profitability, the application process is simpler and therefore financing much faster.

When analyzing the impact of companies' listing location on the profitability, we found that overseas listing will improve the corporate profitability. This may contributed by the more stringent information disclosure requirements of overseas market and the more regulated market with oversight mechanisms and mature international institutional investors. In addition, in order to enable companies to gain long-term market acceptance, the company must use the funds, enterprise development and other substantial improvement which are active to corporate structure and the management level of self-governance. From another perspective, listing in the international market enables enterprises to expand overseas market share, and to earn reputation overseas while exploring the international market as one of the effective means to maximize profits. In addition, the overseas listing can also help companies use international business philosophy and the financed money to open profit growth path.

REFERENCES

- [1] Foerster, Karolyi. *Journal of Finance*, 1999, 54, 981-1014.
- [2] Stulz. Globalization of Equity Markets and the Cost of Capital[J]. *NBER Working Papers*, 1999, 12.
- [3] Amihud Y. *Journal of financial markets*, 2002, 5, 31-56.
- [4] La Porta, Shleifer, Vishny. *The Journal of Finance*, 2000, 57, 47-70
- [5] Sarkissian and M. Schill, *Review of Financial Studies*, 2004, 17, 769-809.
- [6] Chou Xiaomin, *Journal of financial research*, 2005, 5, 34-45.
- [7] Cui Yuanmiao, *Shanghai Finance*, 2004, 4, 56-59.
- [8] Marco Pagano, Ailsa A. Roell and Josef Zecher. *The Journal of finance*, 2002, 4, 9-15.