Asian Journal of Business Management 4(2): 166-176, 2012
ISSN: 2041-8752

Submitted: December 28, 2011 Accepted: February 22, 2012 Published: April 15, 2012

Median Analysis on the TNCs Financial Characteristics of China

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Abstract: The purpose of this empirical study is to study the basic characteristics of Chinese TNCs in the background of economic globalization. Based on the theory of modern TNCs, with data of Chinese listed companies financial statements in 2009, we constructed quantitative analysis system by using more steady statistics which included median, Median Average Difference (MAD), median average difference of dispersion coefficient and median regression model fitted by two-stage least absolute derivation. Then empirical study was carried out on financial characteristics of Chinese TNCs. The results show that Chinese TNCs have advantages relative to other types of companies, ultra big company size is Chinese TNCs' essential requirements, fast capital expansion is Chinese TNCs salient feature and concept of financial management lag is Chinese TNCs' major defect and so on.

Key words: Transnational Corporations (TNCS), Foreign Direct Investment (FDI), median average difference, Two-stage Least Absolute Deviation (TLAD), Median Analysis on the TNCs Financial Characteristics of China

INTRODUCTION

TNCs (Transnational Corporations) refer to conduct cross-border operating companies and establish economic entities in two or three countries. Bartlett *et al*. (2004) further define the concept of TNCs that TNCs are to carry out transnational business in other countries by taking Foreign Direct Investment (FDI). Meanwhile the FDI policy and organizational management of offshore companies are brought into management system of the parent corporate to help the parent corporate to control FDI and oversea companies capital, product and sales. In sort, FDI is the prerequisite for creating TNCs and the core of TNCs is systematic and comprehensive management. In the 16th century TNCs first appeared, then growing up in the 19th century 70s, since the 80s of last century, economic globalization has become the basic trend of world economic development along with knowledgeable, information, internationalization, networking of global economy, the international flow of capital and personal, the rapid growth in transactional form and scale of goods and services, the increasing of economic interconnection and interdependent enhancement between countries day by day. In the tide of economic globalization, TNCs are not only an indispensable motivation of economic globalization, but also optimize their living environment and expand their own development in the economic globalization process.

As one of emerging economies which develop rapidly in the modern world, China plays a more and more important part in promoting the world economic growth, with the growing of its overall economic strength and the total size of the economy. Studying the survival status, developing trend of Chinese TNCs, and exploring the basic characteristics and general law of Chinese TNCs, they are crucial for China to participate in the progress of the world economic globalization actively and give fully play to resource endowment and speed up the adjustment of economic structure and maintain a sustained and stable development, at the same time they have an obvious practical significance in balancing the development of the world economy.

Recalling the growing progress of the theory of modern TNCs, Hymer (1960) brings up the theory of Monopolistic Advantage, in his Ph.D. thesis which is the International Operational of National Firms, a Study of Direct Foreign Investment. Later, Charles Kindleberger, the tutor of Stephen Hymer completes the theory raised by Hymer (1960) and what they do becomes the basic theory of modern TNCs. It has a profound impact on the development of modern TNCs theory. The core of the theory of Monopolistic Advantage is imperfect market and monopolistic advantage. According to this theory, the motive of transnational business is giving full play to its monopolistic factors of production when the company is in the imperfect market. Also with its monopolistic advantages, TNCs can exclude the competition of the host country enterprises and maintain monopoly high prices. The profit created by imperfect competition and monopolistic market can offset the addition cost of

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multinational operations. Therefore these companies can stand on advantage position in market competition. Monopoly advantage mentioned above can be divided into economies of scale, advantages of technology and knowledge, funding, marketing and organizational management advantages. Stephen Hymer thinks first the advantage of technology and knowledge is the most important. Second Monopoly advantage of TNCs is formed in a dynamic progress of development. Third International business is not only the way to achieve monopoly advantages but also the channel to gradually expand and further enhance monopoly advantages.

Vernon (1966) in his article (International Investment and International Trade) studies the law of transnational business and international trade in America by using the product life cycle hypothesis after world war II, and presents the theory of product life cycle about TNCs. In this theory, the product life cycle is divided into three stages: innovation, maturity and standardization; and all countries are separated into three types as developed countries, less developed countries and the Least Developed Countries (LDCs). It shows that at the stage of innovation, without implementing FDI, product can be sale well through export; at mature stage, it time for enterprises which want to occupy local market, then overcome market barriers and reduce production cost by investing and establishing overseas subsidiaries in developing countries and directly engaging in the fields of product and sale in the host country; Into the standard stage, standard technology of production is moved into LDCs with low production costs through implementing FDI. Also, these companies take manufacturing activities offshore and sale in the market of home and less developed countries. The theory of product life associates monopoly advantages with the choice of location, moreover stages of the product life cycle and the level of economic development in the region are joined together, the theory analyses the motive, timing and location of implementing FDI comprehensively.

Peter and Mark (1978) are scholars in Britain. In their book of The Future of the Multinational Enterprises, they study transnational business on the level of theory using the theory of transaction cost and monopolistic advantage, and then raise the theory of Internalization. The main point of the theory is that imperfect market exists not only in final products, but also in intermediate products, which chiefly means knowledge products including proprietary technologies, patents, business management and salesmanship and so on. High transaction costs which is resulted in the lack of pricing and trading mechanism caused by imperfect market make companies to tend to open up the internal market through FDI. It means that commodities trading conducted by the external is changed into the related party transactions between affiliated enterprises, and factor contract takes the place of the original goods contract, so that corporations can reduce transaction costs by expanding their boundaries. There is a universal explanatory power for the internal mechanism of the TNCs by the theory of internalization. The theory can be used to analyze transnational business in the different level of development of countries and regions, and promote the development of the theory of TNCs.

In the writing of trade location of economic activities and the MNE: A Search for an Eclectic Approach, Dunning (1977) carries out the Eclectic Theory of International Production. The theory shows that the multinational operation is synthetically affected by Ownership-Specific Advantage, Internalization Advantage and Location-Specific Advantage of companies. And that Ownership-Specific Advantage and Internalization Advantage are two necessary conditions to carry out international business, however, having Location-Specific Advantage in the host country is a sufficient condition. When the company has necessary and sufficient conditions, multinational business will become the company best choice. The Eclectic Theory of Production, a theoretical system with universal significance, further integrates essence of previous theories and explains the motive to carry out multinational business more comprehensively.

Based on the survey of overseas investment of Japanese enterprises, Kiyoshi (1975, 1978) proposes the Theory of Comparative Advantage. That there is a new explanation about the behaviors and laws of FDI for the combination of trade and FDI.IT is that FDI of TNCs should be started from marginal industries which should have been or are in their comparative disadvantages, and in turn. Also as the shortage of certain elements their business costs increase quickly, those marginal industries can make full use of appropriately abundant elements in the host country through FDI, so they can simply reduce business costs and regain their competitive advantage. It is also helpful to establish certain industries of comparative advantages quickly and promote economic development in the host country. And that, the technology gap between TNCs and companies in host countries should become as small as possible, for which two sides can benefit greater from FDI and trade induced by FDI, then achieve a win-win situation.

With the continuous development of TNCs, sufficiently experiential data accumulated by rich practical activities provide value information for conducting empirical study on TNCs and TNCs theory test and improvement. In accordance with complex phenomenon in transnational business of modern economy, many exports and scholars research and explore basic characteristics and inherent relationship of TNCs by the method of statistical analysis and quantitative models. According to fist-hand information obtained by visiting

and investigating 30 TNCs in United State, Zenoff (1967) carries out a systematic study about management of TNCs. In this study he thinks that achieving maximizing profits of their parent company rather than subsidiaries and affiliates are the core content concerned by TNCs, and it is also the only criterion to evaluate contributions created by subsidiaries and affiliates. Mauriel (1969) who conducts an empirical study on 15 TNCs with a turnover of more than 5 billion dollars in United Stated finds that although evaluation systems of management and management systems of foreign subsidiaries and affiliates consist with their patent company, there are significant differences in actual economic benefits due to the obvious differences between the host country economic environment and cultural background and the investment country . Therefore it is objective requirements to improve economic benefits of offshore companies by readjusting their management systems and evaluation system of management according to the economic and cultural background of the host country. Czechowicz *et al*. (1982) collect 88 TNCs experiential data including financial and non-financial ratios, deeply analyze operating conditions of TNCs. Empirical results show that the data of non-financial ratios doesn have statistically significant, financial ratios remain to be the basic indicator used to examine TNCs operating conditions. Among many of financial ratios for performance evaluation, company budget and actual margin catch TNCs attention. From plan management to daily management then to the annual performance evaluation, margin always is in the core position. Based on the empirical analysis on the data of TNCs in Japanese, Woodcock *et al*. (1994) focus on how the operate performance is influenced by the model of TNCs entering. The results show that solely foreign-funded enterprise established by TNCs has the highest managerial performance, followed by Joint Venture enterprise (JV), and the level of managerial performance of transnational M&A is the lowest. Also through the study on the data in Chinese market, Zhao and Luo (2002) deeply analyze how the operate performance is influenced by the model of TNCs entering. They categorize TNCs produces as related and non-related products according to the related degree of overseas subsidiaries and the parent company core business. As a result, they conclude that related product can significantly reduce transactions costs, give fully play to potential advantages and improve overall effectiveness of TNCs.

Chinese economic has developed rapidly in the past ten years. Therefore, in various industries there are a large number of companies whose brands, products and processes are outstanding in the fierce competition of global market. Many companies which have some competitive advantages go abroad to seize opportunity to conduct multinational operations. These companies transfer their proprietary technology, equipment, process and brands to some other appropriate countries and regions by the way of FDI rather than trade. Then through directly manufacturing and sailing in these host countries, these companies quickly expand their market share and avoid tariff and non-tariff barriers, moreover they obtain more favorable competitive position by using the host country preferential policies. TNCs in China, however, are still in the initial stage. Therefore, it has practical significant to study basic characteristics of existing and potential TNCs in China, because these studies are helpful to guide the improvement of related institutional arrangements and lead Chinese companies to enter into the field of multinational operations quickly.

In recent years, with the growing and perfecting of Chinese domestic capital market, it is gradually becoming an emerging capital market whose legal system, trade rules and regulation basically correspond to international norms. Listed companies abiding by related laws regulated by securities regulatory authorities, publish financial data audited by professional organization and other information. Based on these data issues of TNCs in China , transnational business can be studies empirically by the use of quantitative models and statistical analysis. Also these data make the study on TNCs to be falsification. According to features of transnational business and economic tights tied with other countries, listed companies can be categorized as four types as follows. It maybe the basic categories used to make empirical studies on Chinese TNCs and transnational business.

First of all, according to TNCs defined by Bartlett, Ghoshal and Birkinshaw and the definition of FDI in the notice of " Statistics System of Foreign Direct Investment " issued by Ministry of Commerce of the People Republic of China National Burea of Statistics of China (2009) we can see that TNCs are all kinds of companies which own or control the voting rights or other equivalent interests of 10% or more in the foreign countries by FDI. So these companies are TNCs or nor depending on whether implementing FDI. In order to distinguish them from general TNCs, in accordance with characteristics of FDI, many TNCs among Chinese listed companies are called as foreign direct investment corporations, and abbreviated to FDICs.

Second, there ate many Chinese companies which do not implement FDI but establish overseas permanent or affiliates. These companies carry out non-FDI transnational business in host countries, such as technical services, import and export trade, project contracting, labor export and services. Among the studies on TNCs, many scholars attribute these companies into broad TNCs. For instance, John (1969) shows that the most basic feature of TNCs is whether they implement business in two or more countries. As long as such business is

associated with profitable commercial managements, it can be defined as transnational business, such as the transfer of natural resources, capital, labor, technology and management, or resources like the ability of entrepreneurs. Transnational business economic entities are TNCs.

Richard (1984) also considers that, except international present and aids, transnational business includes all of the product and sale in other countries for the internal financial interest. Those companies engaging in such business don belong to general TNCs for not implementing FDI, but their management aim and method are the same as TNCs, and they set up oversea profit-making permanent to contribute to accomplish the parent company overall business goals and accept unified management of parent company. Moreover, these oversea non-FDI organizations are precludes and preparations to implement FDI, and they also are an important part of the process of implementing FDI. So we can analysis and study these companies as potential FDI. According to the feather that these companies engage in transnational business but not implement FDI, these companies can be defined as non-FDI overseas branch companies, abbreviated to NFDICs.

Third, as we all know, FDI include investment and financing. From the view of host country, FDI is commonly known as foreign FDI also as inward FDI. From the view of invest country FDI often is called as external FDI also as outward FDI. With the process of economic globalization, the globalization of banking is developing fiercely moreover the globalization of capital market improves rapidly. All this increase the scale of cross-border investment and financing through stock markets. Some Chinese listed companies have entered into overseas securities markets to expand the size of the company by equity financing. These companies are usually called as International Multiple Listing corporate. In China we usually called companies which list outside the mainland market as cross-border listed corporations. That is to say companies list on Shenzhen or Shanghai Stock Exchange, meanwhile they also list on stock exchange outside the mainland, such as Hong Kong, Singapore, New York, and London. These companies are called as Cross-border Multiple Listings corporate. Cross-border Multiple Listings finance abroad, at the same time, they provide opportunities and channels of cross-investment for investors in the country where stock are issued. Chinese investor can also implement FDI through capital market, which can help them to attain and control the voting rights or other equivalent benefit of 10% or more, then become TNCs. Therefore Cross-border Multiple Listing corporations provide empirical study on TNCs an opportunity to observe the management system of mature capital market. It also promotes FDI through overseas capital market and builds bridges between general companies and TNCs. In accordance with the basic characteristics of this type of companies, they are called as Cross-border Multiple Listed corporations, abbreviated as CMLCs.

Forth, companies which solely conduct business activities in China belong to the last type of companies in all listed companies. These companies do not directly involve any form of transnational business. It is helpful to build a benchmark platform for comparative analysis of the empirical study on TNCs as the type of companies opposed to transnational business. These companies are called as Purely Domestic Companies, abbreviated as PDCs.

To study business conditions of listed companies we use financial ratios as a base. Rate of Return on Common Stockholders Equity (ROE), as one of financial ratios, reflects the companies comprehensive situation on capital structure, management performance and the ability in profits. It is widely used in studying the overall efficiency and intrinsic value of companies. Hitt *et al*. (1997) point out that there is a close link between capital structure and ROE, that ROE not only reflects the company profit level, but also is a comprehensive measure to study financial performance. ROE is the ratio of stockholders equity to profits. It directly describes the level of maximizing stockholder equity and epitomizes the company financial management objectives. So ROE becomes the core index to study Chinese TNCs.

Most of the financial data are non-normal, such as high peals and fat tails. So mean which significantly deviates from the peak of data hasn been representative in reflecting the central tendency of data and mean model fitted by Least Square also has problems for the impact of extreme values. All this has influenced the mean regression model ability to interpret number and distort the economic significance of the econometric model. Regression curve of median fitted by least absolute deviation can be impacted by extreme values on tail. So it has advantages of better stability and can get effective regression estimator. Because of the differentiability of LAD error measure function, the application and development of LAD has been hindered. In recent years, modern data analysis and technology of data progressing develop quickly and the study of Quantile Regression (QR) has made a series of progress. All this is indispensible to the application of LAD. Koenker and Bassett (1978a, 1978b) propose an operable theory of QR.

Portnoy and Koenker (1997) propose interior point algorithm which is significantly faster than simplex algorithm in operation speed. They also show that LAD has perfect statistical stability and also has broad applicative prospect in quantitative analysis, such as in the filed of econometrics and biomedicine. Amemiya (1982) introduce Two-Stage Least Absolute Deviation (TLAD) into the regression estimation of QR, so as to construct the

median regression model for economic empirical analysis. They get an effective estimator. The quantiles in QR divide an ordered collection of data into several equal parts. If there are two equal parts, that is median. So LAD can be regard as a special case of QR models. ?valued from 0 to 1 is a quantile parameter in QR. When ? equals to 0.5, QR model turns into LAD. From some relative application models supplemented to a large number of software of statistics and econometrics, LAD, the method with complex content and strong application has become popular to be a powerful tool for econometric analysis.

In this paper, under the guidance of the theory of modern TNCs, using the experiential data from the financial statements of listed companies in China, an empirical study is conducted on transnational business of Chinese TNCs from the perspective of financial analysis. First there is a systematic analysis about the feather of the distribution of Chinese listed company main financial ratios, which is indispensible to study Chinese TNCs. Then according to the main financial ratios of Chinese listed companies having the feather of non-normal distribution with high peaks and fat tails, using estimators: median, median average difference and median average difference of dispersion coefficient, all with more stable characteristics, and the median regression model fitted by Two-Stage Least Absolute Deviation, we conduct a compete and median-based quantitative analysis system. So there is an empirical study on financial characteristics of Chinese TNCs.

The distribution of main financial ratios of Chinese listed companies: The empirical study is done according to the financial data of all a share companies listed on Shanghai and Shenzhen Stock Exchange in China in 2009. Because banking is particular in capital structure and profitability, the sample of the empirical study, which remove the data of banking: bank, trust, securities and insurance etc, are formed by the data of the remaining 1653 listed companies, which include 137 FDICs, 135 NFDICs, 55 CMLCs and 1405 PDCs. There is an intersection among between any two of the first 3 categories of companies. For example FDICs could establish standing body in other countries or regions and also list on overseas stock market. There is no intersection between PDCs and the first 3 categories of all listed companies. It means that these companies haven listed on overseas stock market, implemented FDI or non-FDI overseas branch. After removing financial companies, there are 137 general TNCs, accounting for 8.29% of all 1653 listed companies.

According to the basic feather of financial data of TNCs operational activities, through significance test, six ratios, including ROE, are selected for constituting a financial index system of listed companies to do empirical study on Chinese TNCs. This system comprehensively reflects the overall financial characteristics of Chinese listed companies from many different angles, such as income from shareholders equity, capital structure, the level of fund turnover, profit, growth ability and the size of company.

Return On Equity (ROE) is the ratio of earnings per share to net assets per share. It reflects the objective of maximizing shareholders interests. ROE, as an effective indicator, also is used to assess the company performance and comprehensively reflects the company stock value and shareholders income from equity.

Asset Liability Ratio (ALR) is the ratio of total liabilities to total assets. ALR, the same as ROE, reflects the objective of maximizing shareholders interest. It, also known as debt ratio, is used to evaluate the enterprises ability to conduct business with the capital provided by creditors, and reflects the level of the company financial leverage and ability to bear risks caused by operational activities. In addition, ALR is associated with the situation of the company business and the earnings as a superior financial indicator. As we all know, the value of ALR will be higher in high-growth enterprises.

Total Asset Turnover (TAT) is the ratio of the net operating income to average total assets. It is an important indicator to evaluate all assets quantity and efficiency in company business. It also overall reflects company ability in operating and management. In general, higher value of TAT notes that companies are more effective on the use of capital and stronger short-term solvency.

Profit Ratio to Net Worth (PRNW), the ratio of net profit to average total assets, expresses the quantity of net profit obtained by per unit of assets, and measures the profitability using assets. The higher PRNW is, the stronger the ability of profit. It is directly proportional to net profit and correlated with total assets negatively. PRNW comprehensively reflects the level of total assets turnover and the operating margin which is the ratio of net profit and also is the result that PRNW is divided by TAT. So PRNW is an important indicator to reflect the company ability for profit.

Net Asset Growth Rate (NAGR) is the ratio of the current growth in the amount of net assets to the last one. It reflects the expensive speed of the scale of the capital. It, as an important indicator, measures the total size and growth ability of the company.

Total Market Capitalization (TMC) represents the total value of stock which is equal to the number of total stock multiplying its prices. TMC as an important indicator to measure is used to reflect the company total market value.

Table 1 shows the basic descriptive statistics of numerical distribution of the six financial indicators. Then an analysis about the basic characterizes of Chinese listed companies is conducted. There are some illustrations about the table, TMC dimension is million yuan, TAT

Table 1: The descriptive statistics of numerical distribution of Chinese listed companies

Statistic	ROE	ALR	TAT	PRNW	NAGR	TMC
Mean	3.918	67.056	0.500	4.289	19.258	1212857
Median	5.365	51.460	0.420	3.005	4.240	444210
Skewness	-13.532	25.200	3.771	6.745	34.506	28.425
Kurtosis	275.507	703.577	35.063	95.502	1273.450	930.294

dimension is the turnover, percent is chosen as an dimension by the other four indicators, ROE, ALR, PRNW and NAGR.

In the measurement of median and mean, except ROE, the other 5 indicators all have a significant higher level of mean than median, which indicate that there are extreme value in right end of numerical distribution. The higher level of mean is caused by these extreme values. So, mean used to measure the central tendency will exaggerate bias. However, the mean of ROE is significantly lower than median, which indicates that there are extreme values make the overall average to be smaller. Also mean used to measure the central tendency will inevitable underestimate the level of values. It follows that distributions of financial indicators of Chinese listed companies obviously exist a bias, while the directions of the bias are different. Therefore, there are obvious limitations in using mean to measure the central tendency of listed companies financial indicators.

In the two indicators, skewness and kurtosis, used to measure the distribution patterns, all indicators absolute value of skewness is larger than 0, kurtosis larger than 3, which show non-normal characteristics of significant skewness and peak. Among values of all indicators skewness, except that ROE skewness is negative showing left-skewed, the rest are right-skewed, and except TAT and PRNW, there are at least two digits of other indicators absolute value. Among the value of all indicators kurtosis except TAT and PRNW, there are at least three digits of the absolute value.

Analysis of Chinese TNCs financial characteristics based on median: According to the prior analysis of the distribution of Chinese listed companies financial data, the major financial indicators of Chinese listed companies show significant skew. All this makes, without exception, a bias on mean and the mean-based measure, as well as standard deviation and dispersion coefficient used to describe the dispersive degree of the data.

Median, as a measure of location central tendency, chooses the value of the variable in the middle of an order series as the representative value, reflecting the level of the characteristics of research object. Therefore, when there are extreme values in an ordered series of numbers, median, as a measure of central tendency can reduce the influence of extreme values, and has an excellent stability and good representation. Similarly, in skew distribution, it is suitable to use the average of the absolute value of difference between the variable value and its median, or called as Median Average Difference (MAD) to replace the standard derivation of the square root of the mathematical exception of the square of the difference between the value of variable and its mean to measure the dispersive degree of data distribution. From, the prior process Average Difference (AD) is calculated. AD is the sum of the absolute value of difference between the value of variable and its median, also it avoids the influence of extreme values and mathematical skewness. Therefore, AD with the numerical properties of minimum value is the mathematical basis for calculating LAD. In addition, the ratio of MAD to median is used to calculate the dispersion coefficient of median and MAD, in order to distinguish it from the general dispersion coefficient of median and standard deviation, the ratio of MAD to median is directly used to express the dispersion coefficient of median and MAD, that is MAD/Median. As a measure used to reflect the relative degree of dispersion of the indicators value it makes that the measures of the degree of dispersion can be directly compared, excluding the difference in dimension and the numerical level of different indicators.

Therefore, median, MAD and the dispersion of Median and MAD which are more steady and eliminating the impact of extreme values are used to carry out the empirical study based on the financial data of Chinese listed companies. The formula of MAD is:

$$MAD = \sum_{k=l}^{n} \left| X_k - Me \right| / n \qquad (1)$$

where, Me is median, X_k is the value of variable, the subscript k is the number of variable, meanwhile k = 1, 2, n .

Then, when we get the value of MAD, we can calculate the ratio of MAD to median that is Median/MAD.

Table 2 shows values of median, MAD and MAD/Median of six financial indicators of four types of companies: FDICs, CMLCs, NFDICs and PDCs. Using the median of four types of companies as X_k , the median of all companies as Me, then put them into the formula [1]. So the value of MAD is calculated. The prior calculating process shows that MAD just reflects the degree of dispersion between the median of four kinds of companies and all companies (that is the degree of dispersion between group of MAD) which is used to analyze the degree of the difference between the median of four kinds of companies and all companies. At last, the dispersion coefficient of median and between group of MAD that is between group of MAD/Median, can get from the result of the value of between group of MAD dividing all companies median.

Table 2: Based on the median of the financial data analysis of Chinese listed companies

Company type and statistic	ROE	ALR	TAT	PRNW	NAGR	TMC
All company	5.365	51.460	0.420	3.005	4.240	444210
FDICs	5.881	52.731	0.607	4.180	11.772	4997197
NFDICs	5.730	54.260	0.490	2.920	6.040	732124
CMLCs	7.300	57.440	0.410	3.500	5.720	4800042
PDCs	5.260	51.015	0.410	3.010	4.210	412064
Between group of MAD	0.730	2.624	0.069	0.440	2.711	2307220
between group of MAD/Median	0.136	0.051	0.165	0.146	0.639	5.194

In the line of ROE, the value of the median of CMLCs is the highest, reaching to 7.3%, followed by FDICs of 5.88%, again NFDICs of 5.73%, PDCs is the lowest. The degree of the relative dispersion of four types of companies is smaller that the value of between group of MAD/Median is 13.6%. In addition to CMLCs of 7.3% obviously higher than the overall median of 5.365%, there is no significant difference among the ROE median of other 3 types of companies. They all are close to the overall median level. These data illustrate that CMLCs focus on improving their level of ROE for enhancing the value of company in the overseas capital market and truly implement modern companies financial goal, maximizing shareholders interest. However, the importance of shareholders interest is ignored in the domestic stock market in China, such as the lack of the mechanism market incentives in ROE. So the value of other 3 types of companies significantly is lower than that of CMLCs. In addition, FDICs and NFDICs, two types of companies implementing international business are slightly higher than PDCs, but compared with CMLCs, the gap is still very significant.

In the relevant data of ALR, the value of between group of MAD/Median is the lowest only 5.1% in the 6 indicators. Similar to ROE, in ALR, CMLCs median of 57.44% is significant higher than the median of the all companies and the other 3 types of companies. It illustrates that CMLCs focus on improving the level of ALR, which can not only enhance their own efficiency of the use of capital, but also deliver to the capital market the information that the company has a good operating situation, the ability to bear higher risk and that prospects of long-term stable increase of the companies value. Higher level of ALR shows that the company has a higher financial leverage. If there is a higher level of using debt capital per unit invested by shareholders, it is helpful to give full play to the efficiency of capital and tax, and improve the level of ROE. Chinese capital marker information transmission mechanism is not sufficient and there are inadequate incentives to improve the level of ALR which leads to the lower level of Chinese companies. So there is a great potential space for Chinese companies including TNCs to enhance the level of ALR.

In the relative data of ALR, the value of between group of MAD/Median is 16.5% which belongs to the middle level in the six indicators. That of FDICs, reaching 0.607 times is the highest level of median of TAT, followed by NFDICs of 0.490 times, PDCs and NFDICS is the lowest that they are all 0.410 times. It follows that TNCs and potential TNCs, with high levels of traditional financial management focus on increasing the company current operating income to keep sufficient cash flow to improve the efficiency in the use of capital. Higher level of TAT, to a certain extent, makes up for the relative weakness in debt financing. However, it isn got full use of the stronger ability to repay short-term debt. The capital structure with a lower leverage directly offset some advantages of TAT. So that it also reduces the gains of company shareholders.

The degree of relative dispersion of PRNW belongs to middle level that the value of between group of MAD/Median is 14.6%. Among values of PRNW the median of FDICs is the highest reaching 4.18% the lowest one is NFDICs only 2.92%. It shows that FDICs have the highest value of both TNT and PRNW. So for FDICs, unit capital can create a higher net profit and it has a stronger profitability and competitive advantages in market. Companies implementing international business through FDI can rapidly expand its operating scale with the input of capital. So these companies can occupy a larger market share and achieve internalization of advantages and rapid increase of company overall effectiveness. In contrast, though NFDICs have a higher value of TAT and a higher cash flow of operating income, the lower value of PRNW leads to its net profit accounting for a lower proportion of net revenue and the company profitability is weaker, meanwhile this makes them lack the competitive advantages in international market. So NFDICs can expand their production scale and market share by FDI to achieve the rapid increase of company overall effectives. They can only take the form of non-FDI to establish various types of overseas affiliates, then carrying out transnational business step by step.

NAGR has a relatively higher degree of dispersion that the value of between group of MAD/Median is 63.9%. Its median of FDICs is the highest reading to very impressive 11.772%, followed by that of NFDICs of 6.04% higher than that of the other 2 types of listed companies. All this shows that Chinese TNCs and potential TNCs all prefer expanding the scale of capital, especially in FDICs, the expansion rate of capital scale is 2-3 times the general company, highlighting the distinctive characteristics of transnational business. Meanwhile, it fully indicates that there is a high

correlation between the action of FDI and the expansion of capital scale.

The data of TMC have the highest degree of dispersion that the value of between group of MAD/Median is 63.9%. Its median of CMLCs and FDICs is obviously higher than that of NFDICs and PDCs. In it, the median of FDICs is 6.8 times that of NFDICs. All this illustrates that the size of company value, as one of the most important factors decides what forms should be used to carry out transnational business. The TMC value of NFDICs is significantly less than that of FDICs, but still larger than that of all companies and PDCs. It is 1.65 times that of all companies and 1.78 times that of PDCs, respectively. All this indicates that, the value scale of these companies setting up overseas standing body and engaging in transnational business is higher than that of PDCs. The lowest median of TMC of PDCs suggests that most of Chinese SMEs are short of advantages and power to implement transnational business.

The above analysis bases on the median of various types of companies. In this paper, the degree of dispersion examines the difference between the median of all types of companies but don examine the difference among the median of the interior of every type of companies that the difference between the value of every company and median of this type of companies which the company belongs to. So according to the formula [1] the MAD is calculated by taking the value of every company indicators as a variable and the median of a certain type of companies which this company belongs to, that is to say, among group of MAD of this type of companies. Then we also can get the value of among group of MAD/Median of this type of companies. It is the relative degree of dispersion eliminating the influence of specific dimension and the level of value between various types of companies. Meanwhile it is helpful for comparison to calculate all companies average relative degree of dispersion that equals to the result of the mean of the absolute value of deviation between the value of every indicator of every type of companies and all companies median, divided by all companies median. The results show in Table 3.

From the Table 3 we can see, except TMC, the value of among group MAD/Median of FDICs and NFDICs is all less than that of all companies and PDCs. All this illustrates that FDICs and NFDICs the two types of companies which carry out different forms of transnational business are different from other types of company in the 5 key financial indicators.

Table 3: The relatively dissociaton among group of Chinese listed companies

Company type	ROE	ALR	TAT	PRNW	NAGR	TMC
All company	1.471	0.661	0.643	0.948	5.727	2.133
FDICs	0.993	0.343	0.478	0.695	1.491	1.273
NFDICs	1.109	0.320	0.517	0.942	2.837	3.740
CMLCs	1.086	0.316	0.586	0.723	2.164	2.426
PDCs	1.548	0.724	0.657	0.962	6.110	1.115

In the relative data of TMC, the value of among group of MAD/Median of PDCs is the lowest only 111.5%, followed by that of FDICs of 127.3% which still is lower than that of all companies of 213.3%, moreover that of NFDICs is the highest reaching 374%. All this shows that the small-scale feature of NFDICs has the property of strong layer homogeneity, that is to say Chinese SMEs haven yet entered into the stage of transnational business. Among the companies which have carried out, the median of TMC is not only up to 4997197000 yuan, but also the value of among group of MAD/Median is obviously lower than that of all companies, which further shows that TNCs need the support of economic power denoted by the total value of company, whereas there is close relationship between implementing FDI and the total value of company. However, for NFDICs, its value of among group of MAD/Median is the highest, so there are relatively loose requirements on economic power. Thus the total value of company has less impact on setting up overseas affiliates. All this indicates that setting up overseas non-FDI affiliates for a part of Chinese SMEs to try to carry out transnational business.

Median regression model fitted by two-stage least absolute deviation: As ROE has the advantages to reflect the value of company stock and shareholders income and measure the company operating performance, thus ROE is regarded as the core indicator. A series of regression models are constructed between ROE and every one of the other 5 indicators including ALR, TAT, PRNW, NAGR and TMC. Because different types of companies capital structure, the level of capital turnover, profitability, growth capacity and the scale of company have an effect on company overall operating performance, these regression models are used to examine the contribution of various indicators to the efficiency of the company and the specific performance of various indicators. All this is helpful to explore major factors of influencing strategies and operating actives of TNCs and study the basic characteristics of TNCs in China.

According to the four types of listed companies, we establish four binary dummy variables: D1, D2, D3 and D4, corresponding to FDICs, NFDICs, CMLCs and PDCs these 4 types of companies. The value of the four binary dummy variables is 1 when they are corresponding to the relative type of companies, or their value is 0. Regression analysis bases on the multiplication model using dummy variables, assuming that dummy variables only lead to the change of the slope but can change the intercept. This analysis is used to study how the various types of companies impact on the dependent variables ROE. It will

Table 4: The regression coefficients of ROE median regression models

Company type	ALR	TAT	PRNW	NAGR	TMC
FDICs	-0.013	3.659	0.952	0.017	0.765
NFDICs	-0.001	5.379	1.099	0.112	0.860
CMLCs	0.014	3.624	0.967	0.321	-0.664
PDCs	-0.030	4.783	1.272	0.012	16.150

not produce multicollinearity and the issue of dummy variable trap, because dummy variables are not alone put into the regression equation as independent variables. So we can get the regression model based on ROE:

$$ROE = \alpha + \sum_{k=1}^{4} \beta_k . X . D_k + \varepsilon \qquad (2)$$

In the formula [2], where D is the binary dummy variables, β is the regression coefficient, the subscript k represents the type of companies and k = 1, 2,3,4, ϵ is the residuals, X is the explanatory variables that are ALR, TAT, PRNW, NAGR and TMC. In order to facilitate analysis and comparison, especially the dimension of TMC is changed into 100 million yuan, so the value of the regression coefficients of TMC is in the vicinity of the decimal value.

Due to the impact of extreme values, it will produce bias on the regression curve of mean model fitted by LS under the condition of skewed distribution. This bias will increase the absolute value of the deviation of observed value and make this method lose the power in explaining the whole sample. Therefore we construct the median regression model with more stability and the minimum of the sum of the deviation absolute value of the observed values.

In order to improve the estimated efficiency of model to get more efficient estimators, the inverse of the square of reside estimated in the fist stage of model is regard as tool variables and the method of TLAD is used to fit the model. Then put ALR, TAT, PRNW, NAGR and TMC each into the formula [2], using the software of Eviews 6.0 we get 5 median regression models about ROE and 20 regression coefficients. Table 4 lists these values of the 20 regression coefficients, and from Table 4 we can see that all these values of their t-Statistics is higher than 0.001, so they are significant.

Among the regression coefficients of ALR, only that of CMLCs is positive, other types of companies are negative, which indicates that the capital structure of companies is positive correlation to the market value of companies only in CMLCs. Chinese capital market has not yet formed an effective information transmission mechanism, therefore ALR as a major indicator to reflect the profitability and capital structure doesn only fail to associate with the market value of companies, but also show a significant negative correlation. It is closely related to the institutional arrangements of Chinese capital market, because ROE reaching to a certain level is the necessary condition for Chinese listed companies to conduct equity refinancing by share allotment and additional equity offer.

In a long-term, Chinese stock market is in a non-equilibrium state that is a state of provide less than demand. So the eligibility of equity financing and refinancing is a scare resource, thus the listed companies which have such eligibility that a kind of right can be got by companies only when their ROE reach to a certain level won give up the right of equity refinancing. Therefore it has become a natural impulse for listed companies with higher ROE to carry out equity refinancing. All this leads to the regression coefficient of ALR of other types of companies is negative except CMLCs.

The regression coefficients of TAT of all types of companies are positive and TAT is positive related to ROE, which show that increasing the level of TAT is helpful to improve the company value of ROE, and can enhance the market value of company. Among the regression coefficients of TAT, that of NFDICs is the highest reaching to 5.397, followed by that of PDCs of 4.783 and that of CMLCs and FDICs is almost the same, with lower level. All this illustrates that for NFDICs and PDCs TAT has a stronger effect on ROE, these two types of companies are more sensitive to the traditional enterprise and financial management and more dependent on enhancing TAT to improve the level of profitability.

The regression coefficients of PRNW of all types of companies are all positive, which shows that PRNW is positive correlative to ROE. Among the values of regression coefficients of PRNW, the value of NFDICs and PDCs is slightly higher than that of CMLCs and FDICs, which indicates that these two types of companies are more sensitive. Note that the PRNW of these two types of companies has a lower level of median, so under the condition of lower level of PRNW, NFDICs and PDCs have the advantages to increase ROE rapidly through improving PRNW.

The regression coefficients of NAGR are also all positive, which indicates that NAGR is also positive correlative to ROE and there is higher difference among the values of the regression coefficients of NAGR of all types of companies. The value of regression coefficients of NAGE of CMLCs is the highest reaching 0.321, which illustrate that information transmission mechanism of overseas developed capital market has an effect on CMLCs, it means that the rate of capital expansion has a high contribution to ROE. However, the value of NAGR of FDICs is very little, which shows that NAGR will not lead to larger changes of ROE, because the median of NAGR is significant higher than other 3 types of companies.

Expect CMLCs, the regression coefficients of TMC of other types of companies is positive. The regression coefficient of PDCs is the highest up to 16.15, which shows that for PDCs the company total value described by TMC has a big effect on ROE in the context of low level of TMC, and there is a significant advantage in ROE for these companies with greater value scale. However, for FDICs, under the premise of the highest median of TMC, a lower regression coefficient reflects that the ROE of TNCs is no longer sensitive to the changes of TMC and the value scale of FDICs has a little effect on ROE.

CONCLUSION

In summary, we get the following conclusions. Chinese TNCs has comparative advantages different from other types of companies. For instance, the values of median of all indicators of FDICs are higher than that of all companies, and in addition to the second highest value of ROE and the third highest value of ALR, the values of indicators of FDICs are the highest in all types of companies obviously in dominant position, the values of among group of MAD/Median of FDICs all indicators are lower than the average relative degree of dispersion of all companies, and except ALR and TMC these two indicators the values of among group of MAD/Median of other four indicators are the lowest. All this shows that the companies in FDICs have a distinct homogeneity and financial characteristics superior to other types of companies. For example, FDICs don only have the highest value of TAT, but also the value of PRNW is the highest, which illustrates that FDICs have a stronger competitive advantage and internalize these advantages of company, then improve the overall efficiency of company.

Ultra big company size is the basic characteristics of Chinese TNCs. In Table 2, the median of TMC of FDICs is the largest up to 49971970000 which is 11.25 times the median of all companies of 4442100000 and 6.83 times the median of NFDICs of 7321240000. Meanwhile the value of among group of MAD/Median of TMC is very low, only 1.273, which shows that the value scale decides whether a company carries out transnational business or not and what form is used to implement transnational business. All in all, ultra big company size is the basic characteristics of Chinese TNCs.

It is necessary to investigate the complex investment environment in detail and analyze the probability of project for companies implementing transnational business by FDI. The company also needs to have the ability to bear a higher risk and have a large number of professional managers. However, Chinese SMEs can satisfy these conditions. From the analysis of the project cost, the company of super-large scale has the ability to carry out FDI which needs a larger total capital. They can reduce the unit cost and operate risk of transnational business. So the economic scale of a company is the major factor to determine the form of transnational business. Chinese SME with smaller total economic scale can carry out their own transnational business such as import and export trade, technical services, project contract, labor export, services and other non-direct investment etc.

Rapid expansion of capital is the significant characteristic of Chinese TNCs. FDICs value of NAGR is the highest up to a very impressive 11.772% and is 2.78 times the median of all companies and is 1.95 times that of NFDICs of 6.04%. And the value of among group of MAD/Median of NAGR is the lowest only 1.491, which indicates that the rapid expansion of capital is the significant characteristic of Chinese TNCs. FDICs with significant advantages can further reduce the transaction costs and improve the company overall profitability by FDI in related industries.

The lag of the concept of financial management is the main disadvantages of TNCs. Compared with CMLCs, the median of ROE of FDICs is 5.881% which is significantly lower than that of CMLCs of 7.3%. The median of *ALR* of FDICs is 52.371% which is also lower than that of CMLCs of 57.44%. In the median model of *ROE* fitted by TLAD, the regression coefficient of ALR of FDICs is-0.013, whereas that of CMLCs is 0.014. All this shows that FDICs have the advantages in the value of the median of TAT, PRNW, NAGR etc, but FDICs lag behind CMLCs which list in the overseas developed capital market in ROE (the core objective of modern financial management) and ALR (directly reflecting the company financial leverage), which reflect the lack of incentives in the domestic capital market. Under the background of the lag of the companies management level, the lag of the concept of financial management exists in Chinese TNCs.

The measure and model based on median is an effective method to research the financial characteristics of TNCs. Because the absolute value of skew coefficients of all data is significant higher than 0, and the peak coefficient is significant higher than 3. There are significant peak and skew feathers, which makes mean, mean standard deviation, dispersion coefficient and other measure and the mean regression model fitted by LS be influenced by extreme values, they all produce bias. Median, as a measure of central tendency can reduce the influence of extreme values, and has an excellent stability and good representation. So using median, MAD based on median and the regression model estimated by TLAD is an effective method to do a study on TNCs from the perspective of financial.

Limitations and prospects of the study: Due to the limitations of data resources and space, in the paper we only use the cross-sectional data of Chinese listed companies in 2009 to conduct an empirical study on Chinese TNCs from the perspective of financial. So in this paper there is a lack of the observation on Chinese TNCs in non-listed companies and a lack of the dynamic research on the developing trends of Chinese TNCs and a lace of the industry analysis of Chinese TNCs. Using the industry data, panel data and time series data, the following study should further research the growth path and the developing trends of Chinese TNCs.

REFERENCES

Amemiya, T., 1982. The two-stage least absolute deviation estimators. Econometrica, 50(1-3): 689-711.

Bartlett, C.A., S. Ghoshal and J. Birkinshaw, 2004. Transnational Management: Text, Cases and Reading in Cross-Border Management. 4th Edn., Irwin/Mc Graw Hill, Boston.

Czechowicz, I.J., F.D.S. Choi and V. Bavishi, 1982. Assessing Foreign Subsidiary Performance Systems Practices of Leading Multinational Companies. Business International Corporation, New York.

Dunning, J.H., 1977. Trade, Location of Economic Activity and the MNE: A Search for an Eclectic Approach. In Ohlin, B., P.O. Hesselborn and P.M. Wijkman, (Eds.), the International Allocation of Economic Activity. Macmillan, London, pp: 395-431.

Hymer, S.H., 1960. The international operations of national firms a study of direct foreign investment. Ph.D. Thesis, MIT Press.

Hitt, M.A. and D. Smart Debt, 1994. A disciplining force for managers or a debilitating force for organizations. J. Manag. Inquiry, 3: 44-152.

Kiyoshi, K., 1975. International trade and foreign investment: Substitutes or complements. J. Econ., 15(1): 78-103.

Kiyoshi, K., 1978. Direct Foreign Investment: A Japanese Model of Multinational Business Operation. Croom Helm, London.

Koenker, R. and G. Bassett, 1978a. The asymptotic distribution of the least absolute error estimator. J. Am. Stat. Assoc., 73: 618-622.

Koenker, R. and G. Bassett, 1978b. Regression quantiles. Econometrica, 46: 33-50.

John, F., 1969. International Business Management: A Conceptual Framework. McGraw-Hill, New York.

Mauriel, J.J., 1969. Evaluation and control of overseas operations. Manage. Account., May: 35-52.

Ministry of Commerce of the People Republic of China National Burea of Statistics of China, 2009. The notice of" Statistics System of Foreign Direct Investment". No. 684 of the Ministry of Commerce and Ministry of Foreign Affairs.

Peter, J.B. and C. Mark, 1978. The future of Multinational Enterprise. Macmillan, London 1976: A Theory of International Operation, North-Holland, Amsterdam.

Portnoy, S. and R. Koenker, 1997. The Gaussian hare and the Laplacian Tortoise: Computability of squared-error versus absolute-error estimators. Stat. Sci., 112: 279-300.

Richard, D.R., 1984. Internationization of Business: An Introduction. Illustrated Edn., Dryden Press, Hinsdale, IL.

Vernon, R., 1966. International investment and international trade in the product cycle. Q. J. Econ., 80: 190-207.

Woodcock, C.P., P.W. Beamish and S. Makino, 1994. Ownership-based entry mode strategies and international performance. J. Int. Bus. Stud., 2: 253-273.

Zenoff, D., 1967. Profitable, fast growing, but still the stepchild. Columbia J. World Bus., pp: 51-56.

Zhao, H. and Y. Luo, 2002. Product diversification, ownership structure and subsidiary performance in china dynamic market. Manage. Int. Rev., 42(1): 27-48.