The Diversification Motivation of Downward Performance Listed Companies in China: A Descriptive Statistics Analysis

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This paper intends to examine the motivation of diversification. We choose the Shanghai listed companies that adopted a diversification strategy in 2011 but realized a declined performance in 2012 as the study samples, and come to the following conclusions: (1) The macro environment will affect the implementation of the diversification strategy for some industries, such as extractive industry, wood furniture industry, rubber industry, and the building industry; (2) As to the sample of downward performance diversified companies, the shareholders' benefits transfer motivation is an important consideration. Further analysis shows that there are some differences in the degree of diversification, benefits transfer motivation, and the degree of income impairment when the sample is classified by corporate nature, growth stage, and firm size. The differences are more obvious in different corporate natures; and (3) A clear correlation between the management ability and the degree of income impairment is not found. But there are some correlations between ownership concentration and the degree of income impairment.

Keywords: diversification, motivation, downward performance, benefits transfer

The Proposition of the Question: From the Dilemma Result of Regression

Diversification strategy has both advantages and disadvantages. On one hand, diversification can enable companies to avoid the risk of specific operations effectively, make full use of resources, create synergies effects and economies of scale, and save transaction costs, thereby enhancing the core competitiveness of a company. Based on these advantages, diversification can be considered to enable companies to rapidly grow up and achieve better operating performance. But on the other hand, diversification can disperse company resources, increase the difficulty of company management, and increase the costs of coordination and communication in the company. More seriously, diversification may pose a risk such as financial risk, which leads to a large number of companies falling into financial troubles, even on the verge of collapse.

In order to grasp the effect of diversification in Chinese enterprises, this paper examined Shanghai listed companies adopting diversification strategy in 2011 and its correlation with the operating performance and the market value in 2012, and we found unexpected results: The correlation between diversification and operating performance is significantly positive, but the correlation between diversification and the market value is significantly negative. Details are as follows.

The Study Sample

We take the full sample of Shanghai listed companies in 2011, excluding: (1) banking industry, whose data are not comparable with other industries; (2) ST or * ST companies; and (3) the companies whose data are missed during the period considered. Finally, we get 870 observations.

The Study Variables

In this part, we use the company's operation results and the market value as the dependent variables.

Because the investment income coming from the investment assets is not the income from daily operating activities, in order to consider the net impact of diversification on operation results, we measure operation results (OR) as follows: $OR = (Operating\ profit - Investment\ income) / Operating\ assets * 100\%$.

We use Tobin's Q as the indicator of company's market value.

As to independent variable, which reflects the degree of diversification, we observe it through business numbers (*DIVISION*) and entropy index (*EI*). The *DIVISION* is determined based on the Guidelines on Industry Classification of Listed Companies issued by the Commission in 2001. The industry is divided into categories, namely, single letter plus two-digit code reference to the US Standard Industrial Classification (SIC) and China's national industry classification. The *EI* is calculated as follows:

$$EI = - \sum_{i=1}^n P_i \ln P_i$$

where:

$i = 1, 2, \dots, N$;

P_i = The percentage of i 's revenue in the total revenue.

About control variables, we select company size (*SIZE*, measured by the natural logarithm of total assets), financial leverage (*LEV*, measured by asset-liability ratio), growth level (*GROWTH*, measured by the rate of sales growth), and industry dummy variables (*INDUSTRY*, listed companies are divided into 13 categories of industry with reference to the Chinese Listed Companies Classification Guidelines. Due to exclusion of the banking industry, it totals 12 categories. So we divide the categories into 11 dummy variables).

When analyzing the correlation between the diversification and the market value of companies, profitability indicator (*ROA*, return on assets) is added as the control variable.

Regression Model

In order to verify the relationship between the operation results and the degree of diversification, the paper establishes the following operation results regression model:

$$OR = \beta_0 + \beta_1 X + \beta_2 SIZE + \beta_3 LEV + \beta_4 ROA + \beta_5 GROWTH + \varepsilon \quad (1)$$

Among the model, the independent variable X selects *DIVISION* and *EI* separately.

In order to verify the relationship between the market value and the degree of diversification, the paper establishes the following market value regression model:

$$Tobin's\ Q = \beta_0 + \beta_1 X + \beta_2 SIZE + \beta_3 LEV + \beta_4 ROA + \beta_5 GROWTH + \varepsilon \quad (2)$$

Among the model, the independent variable X is *DIVISION* and *EI* separately.

The Regression Results

Table 1 reports the regression results. When the dependent variable is the operation results, adjusted R^2 of the models is more than 30%, so we consider that the explanatory power of the model is strong. We find that the operation results variable is significantly and positively related to the independent variables whether it is measured by the *DIVISION* or *EI*. The effect is statistically significant at the 5% and 10% levels separately. That is to say, the companies which adopted the diversification strategy in 2011 made better performance in 2012. Diversification has a positive effect on the company performance.

Table 1

The Regression Results of Operation Results Model and Market Value Model

Dependent variable	The operation result				The company market value			
	c (1)	t (2)	c (3)	t (4)	c (5)	t (6)	c (7)	t (8)
Intercept	-12.57	-3.62***	-12.58	-3.62***	10.899	8.617***	10.972	8.634***
<i>DIVISION</i>	0.241	2.064**			-0.074	-1.687*		
<i>EI</i>			0.77	1.655*			-0.239	-1.348*
<i>SIZE</i>	1.159	7.222***	1.175	7.338***	-0.417	-6.87***	-0.421	-6.96***
<i>LEV</i>	-0.174	-16.2***	-0.174	-16.1***	0.002	0.526	0.002	0.409
<i>ROA</i>					0.027	1.596	0.026	1.527
<i>GROWTH</i>	0.054	9.034***	0.054	9.006***	0.006	2.483**	0.006	2.515**
IND1	-3.895	-2.63***	-3.992	-2.69***				
IND2	-1.228	-0.864	-1.304	-0.916				
IND3	-2.496	-2.68***	-2.577	-2.76***				
IND4	-1.063	-0.864	-1.177	-0.958				
IND5	-1.255	-0.866	-1.121	-0.77				
IND6	-2.641	-2.20**	-2.707	-2.255**				
IND7	-2.337	-1.93**	-2.448	-2.031**				
IND8	0.745	0.661	0.842	0.742				
IND9	-0.106	-0.087	-0.096	-0.078				
IND10	-1.008	-0.662	-0.926	-0.609				
IND11	-3.035	-1.704*	-3.096	-1.737*				
Observation	870		870		870		870	
Adj. R^2	0.321		0.320		0.273		0.269	
<i>F</i>	24.408***		28.254***		14.241***		14.019***	

Notes. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively (two-tailed test). c: coefficients; t: t-value.

When the dependent variable is the market value, we find that the market value of the companies is significantly and negatively related to the independent variables (both *DIVISION* and *EI*) at the 10% level. That is to say, diversified companies will bring impairment of market value compared with specialized companies. The higher the degree of diversification, the worse the market value will be.

Comparing the above two regression results, we find an interesting phenomenon that there is a significant positive correlation between the degree of diversification and the operating results, but there is a significant negative correlation between diversification and the market value. The two regression results indicate that although some diversification strategy adopted companies showed a positive effect on the operating results, the market response is negative.

The Objective and Structure Design of This Paper

According to our argument, the reason of the above dilemma result is that the market can not only identify the diverse impact on operating results, but also capture some additional information. In other words, the market may find some other motivations for listed companies to choose diversification strategy, resulting in market value impairment. Therefore, this paper intends to examine the motivation of diversification.

The Objective of This Paper

We consider that our research can be viewed as the new evidence to the literature of diversification motivations. Many researches by far concerned the motivations of diversification-taking companies, but they did not distinguish the good performance and bad performance. We will pay attention to those downward performance companies and try to find the special motivations of these companies.

Our findings are also supposed to be helpful to investors and regulators. If investors can identify the diversification motivation of a company, they may make more clever investment decisions and avoid losses. Regulators can take some actions to prevent the occurrence probability of irrational motivation and to ensure the healthy development of listed companies.

The Structure Design of This Paper

This paper argues that, on the condition of the overall upward trend of operation results, those companies which adopt a diversification strategy but have a decline in their operation results might have other motives beyond improving performance. So, we choose the Shanghai listed companies that adopted a diversification strategy in 2011 but had a declined performance in 2012 as the study samples. We will explore the possible motives of these sample companies in detail.

The rest parts of this paper are organized as follows. Firstly, we take a literature review of diversification rational and irrational motivations. Secondly, we explain the empirical study design, including the sample selection, source of data, and our rationale about motivation. Thirdly, we present a descriptive statistics analysis of three kinds of motivations separately, and finally, we give the conclusion and future research directions.

The Literature Review of Diversification Motives

Academic research on the correlation between diversification and corporate performance originated from Lang and Stulz (1994). Our paper focuses on the motivations of the companies which adopted the diversification strategy in 2011 but showed a downward performance in 2012. So, the following literature review is mainly about the motivations for diversification.

By summarizing the relevant literature, we consider that diversification motivations can be divided into rational motivations and irrational ones. Rational motivations include resource allocation motivation, market power motivation, and risk diversification motivation, whereas irrational motivations include managers' self-interest motivation and major shareholders' tunneling motivation.

The Literature Review of Rational Motives

The theoretical basis of resource allocation motivation is the resource-based theory. The point of the theory is that the motivation of diversification is to make full use of enterprise surplus resource. Business growth (such as diversification, mergers and acquisitions) should seek a balance between the use of existing resources and the development of new resources. The theory was first proposed in 1959 by Penrose. Teece (1980; 1982), Chatterjee and Wernerfelt (1988), and Matsusaka (2001) supplemented the theory later.

The theoretical basis of market power motivation is the market-power theory. The point of this theory is that the success of the diversified company is at the expense of the interests of the non-diversified company. They succeed not because of its higher efficiency, but because that they can get “conglomerate power” (Hill, 1985). This view was first proposed by Edwards (1955) in conglomerate bigness as a source of power.

The theoretical basis of risk diversification motivation is the portfolio theory. The point of this theory is that diversified investments enable companies to balance risk and get a stable income. This theory was first developed by Markowitz (1952). He believed that the product structure formed by diversification can compensate for the deficiency of strong market rigidity and poor adaptive capacity of specialized operation. Diversified companies can adjust the product structure, improve market adaptive capacity, enhance operating flexibility, and reduce operational risks. Markham (1973) believed that as long as the company’s various operation cash flows are not entirely correlated, the change in the overall cash flow of the company can be reduced due to the diversity. Lubatkin and Chatterjee (1994) found that there was a U-shaped relationship between the diversification and stock returns risk, and the approach to minimize business risk is related diversification rather than specialization or unrelated diversification. Lewellen (1971) found that diversification has the “co-insurance” effect; a number of not entirely related businesses can spread risk and increase their overall debt capacity.

The Literature Review of Irrational Motives

Two kinds of irrational motivations, including managers’ self-interest motivation and major shareholders’ tunneling motivation, are based on agency theory. Agency problems come from the separation of ownership and management, and two categories of agency problems can be seen: the first agency problem and the second agency problem (Zhang, 1996). The former is the problem between shareholders and managers. Thus, it brings about managers’ self-interest motives, meaning that the managers will consider reducing their employment risk and improving their compensation and reputation levels. The latter is the problem between major shareholders and minority shareholders brought by the difference of control rights and cash flow rights. Thus, it brings about major shareholders’ tunneling motivation, meaning that controlling shareholders can make full use of their control rights to transfer the corporate resources and seek their own interests (Johnson, La Porta, Lopez-De-Silanes, & Shleifer, 2000).

By diversification, big shareholders realize tunneling through the following ways: (1) to be in collusion with managers, or even directly take the management position themselves, then pay excessive management compensation; (2) construct complex inter-company transactions, make use of the “mutual guarantee” effect of diversified companies to avoid regulation; (3) make use of “cross-sectorial subsidies” effect of diversification, by trading with the related party or investing projects which are not profitable but are conducive to controlling shareholders of the company. As a result, company’s overall investment efficiency will show as inefficiency or wasteful; and (4) build up a complex organizational structure through the diversified investment, to decline the transparency of information and to bring more information asymmetry.

The analysis above is considered about the subjective motives of diversification. In reality, the selection of the company’s diversified business mode depends on both subjective motives and objective ones, such as the company’s macro environment (industry, geography), the operator’s ability, and the operation ability of the company’s level. The company’s objective conditions also play an important role in the consideration of a company’s business model and diversification effect. Therefore, this paper studies the diversification motivation and performance declining of listed companies from both subjective and objective points of view.

Empirical Design

Samples and Data Sources

We select the samples through two steps. First, we think that companies whose business number is greater than or equal to 2 adopt a diversification strategy. Of listed companies in the Shanghai stock market in 2011, it totals 514 for diversification companies. Second, we calculate the difference between the operating results in 2011 and in 2012. Among them, we take the difference less than zero as a sign of downward performance companies. As a result, we get 332 diversification and downward performance samples.

The data of this paper come from CNINFO (<http://www.cninfo.com.cn/>), CSMAR GTA (<http://www.gtarsc.com/>) financial databases, Shanghai Stock Exchange. For statistical analysis, we use Excel 2013 and SPSS 21.0 software.

The Correlation Test of Diversification and Performance in the Selected Sample

In order to test the selected sample, this part gives a regression test of the selected 332 samples using the operation results model (1). The comparison results with the full sample (870) are shown in Table 2.

Table 2

The Comparison Results of Different Samples in the Operation Results Model

Variable	Full sample		Selected sample		Full sample		Selected sample	
	c	t	c	t	c	t	c	t
Intercept	-12.57	-3.62***	-10.30	-1.87*	-12.58	-3.62***	-11.25	-2.04**
DIVISION	0.24	2.06**	0.25	1.25				
EI					0.77	1.65*	-0.20	-0.28
SIZE	1.16	7.22***	0.89	3.37***	1.18	7.34***	0.99	3.77***
LEV	-0.17	-16.2***	-0.15	-8.81***	-0.17	-16.1***	-0.15	-8.8***
GROWTH	0.05	9.03***	0.06	5.40***	0.05	9.01***	0.07	5.41***
IND1	-3.89	-2.63**	-1.54	-0.70	-3.99	-2.69**	-1.72	-0.79
IND2	-1.23	-0.86	1.47	0.82	-1.30	-0.92	0.99	0.55
IND3	-2.50	-2.68***	-0.73	-0.59	-2.58	-2.76***	-1.00	-0.82
IND4	-1.06	-0.86	0.57	0.31	-1.18	-0.96	0.50	0.27
IND5	-1.26	-0.87	1.33	0.77	-1.12	-0.77	1.14	0.66
IND6	-2.64	-2.20**	0.36	0.22	-2.71	-2.25**	0.26	0.16
IND7	-2.34	-1.93**	-0.24	-0.14	-2.45	-2.03**	-0.52	-0.31
IND8	0.75	0.66	2.79	1.96*	0.84	0.74	2.54	1.78*
IND9	-0.11	-0.09	2.84	1.70*	-0.10	-0.08	2.57	1.52
IND10	-1.01	-0.66	2.28	1.08	-0.93	-0.61	2.59	1.23
IND11	-3.04	-1.70*	0.12	0.05	-3.10	-1.74*	0.27	0.12
Observation	870		332		870		332	
Adj. R^2	0.32		0.29		0.32		0.29	
F	24.408***		10.132***		28.254***		9.985***	

Notes. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively (two-tailed test). c: coefficients; t: t-value.

It shows that in the selected sample of downward performance companies, the correlation between diversification and performance is not significant; the coefficient of *EI* even becomes negative. It evidences that the diversification motivation of our selected sample might not be performance improvement. We will show the detailed analysis of their motives later.

Different Diversification Motives

Based on the previous research, we consider that diversification motivations could be divided into good (rational) motivations and bad (irrational) motivations. Different motivations may also lead to different results. One possibility is that the company is based on good intentions to adopt diversification strategy and also obtains good results, which indicates that the diversification strategy is successful. We do not include this case in our study.

The second possibility is that the company is based on bad motives (not conducive to enterprise development) to adopt diversification strategy and obtains bad performance, which means that the bad motivations are more likely to be managers' self-interest motive or large shareholders' tunneling motive. In this case, the diversification is just to seek personal gain for minority group, so the business results cannot be good.

The third possibility means that a company has good intentions to adopt diversification strategy but gets bad results. This situation is likely to be due to the adverse impact of the macro environment or because of the operators' limited ability. The operators of the company cannot control the company well after expanding business and scale.

The latter two cases are included in our study. The research purpose of this paper is to identify which type of motivation is the reason of the downward performance of diversified listed companies.

Based on the above analysis, the following empirical study is divided into three parts: Firstly, we consider the macro environment. Of the 332 companies, some showed a downward performance due to the industrial decline. We do not think that these companies have bad motivations on diversification. Secondly, we consider the benefits transfer (tunneling) motivation. If a company's downward performance is not due to the impact of macro aspects, we should consider that it might have the consideration of the benefits transfer. Thirdly, if the samples do not belong to the second category, we consider the companies' abilities.

Descriptive Statistics Analysis of Diversification Motivation: Macro Environment View

Industry Analysis

If an industry's overall downward performance occurred due to the impact of the industry environment, even if the adoption of diversification strategy is favorable for the company development, it is also likely to have an adverse impact. The analysis of geographical differences is similar to the above ideas. Therefore, we made analysis from this perspective firstly.

Table 3 presents the statistical results. From Table 3, when we do not distinguish between industries, the proportion of downward performance in diversified sample is 65%. We consider industries whose proportion is higher than 80%, including extractive, wood furniture, rubber, and the building industry, belong to this category. Next, we will study the specific characteristics of these industries briefly.

Extractive industry. The extractive industry is the basic industry of the national economy. China's 93% energy, 80% industrial raw materials, and 70% agricultural production come from the extractive industry products. The development of extractive industries provides the wealth of mineral raw materials and plays a supporting role in the national economy.

From 2011 to 2012, the State Council has issued a number of policies to ensure energy conservation goals. By 2015, the national 10,000 GDP energy consumption has to fall to 0.869 tons of standard coal (at 2005 prices), decreased by 16% compared to 1.034 tons of standard coal in 2010, decreased by 32% compared with 1.276 tons of standard coal in 2005. Seen from a policy perspective, the country has increased the demands for

energy conservation to promote the elimination of lagging production capacity. On the other hand, the production costs, labor costs, and equipment costs of coal present an upward trend. Coupled with the impact of resource tax, the competition in the industry is more intensive and the profitability of companies is a greater challenge.

Table 3

Industry Level Statistical Results

Industry [*]	Diversity sample (N)	Selected sample (N)	Proportion (%)
Agriculture, forestry, animal husbandry, and fishery	12	7	58
Extractive industry	19	18	95
Manufacturing: food, beverages	22	12	55
Manufacturing: clothing, fur	29	18	62
Manufacturing: wood, furniture	1	1	100
Manufacturing: paper, printing	8	6	75
Manufacturing: petroleum, chemical	37	23	62
Manufacturing: rubber, plastics	10	8	80
Manufacturing: metal, non-metal	31	24	77
Manufacturing: machinery, equipment	55	39	71
Manufacturing: communications, electronics	38	20	53
Manufacturing: others	7	4	57
Electricity, gas, and water	28	12	43
Building industry	21	18	86
Transportation and warehousing	28	20	71
Telecommunications services	27	16	59
Wholesale and retail trade	50	35	70
Realty industry	30	18	60
Social services	17	8	47
Information and cultural industry	9	6	67
Comprehensive industry	35	19	54
Total	514	332	65

Notes. ^{*}: For industry classification, please refer to Chinese Listed Companies Classification Guidelines. As manufacturing categories have a wide range, we divide them into sub-categories. Other industries are listed by category.

In the oil and gas mining industry, due to the poor mining technology and inadequate supply to the demand, our dependence on foreign oil has increased year by year. So the industry cost is greatly affected by the international oil prices. The cost of oil is more and more difficult to control. There is a significant decline in profitability.

Above all, the extractive industry is a resource-dependent industry. The unfavorable industry environment leads 18 of 19 diversified companies to downward performance.

Wood furniture industry. There is only one company (Guangxi Fenglin Forestry, 601996) which adopted the diversification strategy. From the analysis of its 2012 annual report, we found that the major decline in its operating results is because of the changes in the industry. Due to the complex economic environment in international and domestic markets, the continued regulation of domestic real estate industry and the rising raw materials costs and labor costs, the gross profit of fiberboard is reduced further, and the domestic plywood markets is in the general downturn.

Rubber industry. Due to the impact of the 2008 financial crisis, the international crude oil prices plunged and the world's financial markets fell into a slump. The rubber prices fell sharply.

Rubber is a low added-value industry. The raw material costs of natural rubber usually account for about 50%, so the raw material price fluctuations directly affect the competitiveness of enterprises and industry profits.

Because costs passing on to the downstream end consumer require a longer period of time, this results in the declining of rubber profitability. Altogether, 8 of 10 diversified companies showed a downward performance.

Building industry. The government regulation on the property was still strong in 2012, meaning more challenge for building industry. In addition, the high labor costs led to the poor performance of the building industry in 2012. Altogether, 18 of 21 diversified companies showed a downward trend.

Geographical Analysis

Table 4 presents the statistical results of the geographical distribution. There are not significant differences among regions, so we do not think that the geographical factor is important for our study.

Table 4

The Geographical Distribution Statistical Results

Regional comparison	Diversity sample (<i>N</i>)	Selected sample (<i>N</i>)	Proportion (%)
East	354	229	65
West	89	57	64
Central	71	46	65
Total	514	332	65

The Summary of Macro Environment View Analysis

In summary, the downward performance of extractive industry, wood furniture industry, rubber industry, and the building industry is because of their industry environment. Therefore, when analyzing the benefits transfer motivation and good intentions at the enterprise level, these companies are excluded. The number of downward performance companies excluding these companies becomes 287.

Descriptive Statistics Analysis of Diversification Motivation: Benefits Transfer View

Tunneling is a concept proposed by Johnson et al. (2000). This behavior usually means a violation of the interests of small shareholders. Diversification is a possible way of shareholders' tunneling.

Descriptive Statistics of Benefits Transfer Motivation

According to Jiang and Yue (2005), "other receivables" is an important indicator to measure the tunneling. They collected the borrowing data of large shareholders in "other receivables" for all the manufacturing companies in the Shanghai Stock Exchange from 1999 to 2002 manually and found that a greater proportion of other receivables were attributable to the large shareholders loans. Jiang and Yue (2005) and Lu, Liu, Sun, and Yang (2011) pointed out that, there were also funds occupied by the non-controlling shareholders in the other receivables, so the use of other receivables as the measure index of funds occupation can reduce the probability of first-class error (false rejection error) in empirical research. So, we use "other receivables/total assets (CS)" to express the extent of controlling shareholders' benefits transfer (tunneling) motivation. In general, the greater the CS index value is, the stronger the benefits transfer motivation is.

In order to test whether the benefits transfer motivation is the reason of diversification downward performance, we conducted a descriptive statistics analysis of the diversification sample divided into downward performance sample (D sample) and non-downward performance sample (NO-D sample) firstly.

Table 5

The Descriptive Statistics Results of CS in Total Diversification Sample

Sample	N	Minimum	Maximum	Mean	Std. dev.	Median
NO-D sample	182	0.00	21.50	2.28	3.12	1.21
D sample	332	0.02	37.73	2.40	3.43	1.29
Diversification sample	514	0.00	37.73	2.36	3.32	1.25

Table 5 shows that, the mean of CS in D sample is higher than that in NO-D sample. It indicates that downward performance diversified companies are more likely to have higher CS value. So we can conclude that the motivation of diversification is likely to be associated with the benefits transfer.

To further test the finding, we select paired samples based on different principles. We believe that some inherent differences may exist in the CS indicator and operation results of companies with different industry and size, so controlling the two factors before comparison is necessary, and the results will be more convincing. In this paper, the principle of selecting paired sample one (P sample 1) is: excluding the extractive industries, wood furniture industry, rubber industry, and the building industry. We select diversified companies whose performance did not decline with the same industry and similar size.

From Table 5, of the total 514 companies sampled, the number of companies (182) that do not have a declined performance is less than the number of companies (332) that have a declined performance. Therefore, we cannot get paired results for the entire performance decline sample. Based on the selecting principle of P sample 1, the number of pairs of sample group one is 171, and its descriptive statistics result of other receivables indicators (CS) is shown in Table 6.

Table 6

The Descriptive Statistics Results of CS in D Sample and P Sample 1

Sample	N	Minimum	Maximum	Mean	Std. dev.	Median
D sample	171	0.19	37.73	3.47	4.11	2.20
P sample 1	171	0.00	21.50	2.25	3.13	1.16

From the results in Table 6, we can see that the mean difference of CS between the D sample and the P sample 1 is 1.22, higher than 0.12 in Table 5. The minimum, maximum, and median of CS are also higher in D sample.

We believe that the greater the shareholding proportion of the controlling shareholders is, the stronger the willingness and ability of the controlling shareholders to adopt diversification strategy based on their own interests, so their benefits transfer motivation may be greater. In this paper, the principle of selecting paired sample two (P sample 2) is: excluding the extractive industries, wood furniture industry, rubber industry, and the building industry. We select diversified companies whose performance did not decline at the similar shareholding level. Based on the selecting principle of P sample 2, the number of pairs of P sample 2 is 176, and its descriptive statistics result of CS is shown in Table 7.

Table 7

The Descriptive Statistics Results of CS in D Sample and P Sample 2

Sample	N	Minimum	Maximum	Mean	Std. dev.	Median
D sample	176	0.02	37.73	2.92	4.08	1.63
P sample 2	176	0.00	21.50	2.30	3.16	1.22

From the results in Table 7, the mean of CS in the D sample is 2.92, compared to 2.30 in P sample 2. The other descriptive statistics of CS indicator are higher in D sample.

In this paper, paired sample 3 (P sample 3) is selected on the basis of P sample 2. After further control of the industry, we get 171 pairs of sample groups.

Table 8

The Descriptive Statistics Results of CS in D Sample and P Sample 3

Sample	N	Minimum	Maximum	Mean	Std. dev.	Median
D sample	171	0.02	37.73	2.98	4.22	1.46
P sample 3	171	0.00	21.50	2.25	3.13	1.16

From the results in Table 8, the mean of CS in the D sample is 2.98, compared to 2.25 in the P sample 3. The mean difference of CS between the D sample and the P sample 3 is 0.73, higher than 0.62 in Table 7.

In summary, both in the entire sample and in the three different pair samples, the mean of CS in downward performance sample (D sample) is higher than in NO-D sample. So, we can conclude that diversification is indeed related to the benefits transfer motivation.

Paired Samples *T*-test

To further test whether there are significant differences of the mean of CS between D sample and NO-D sample, we do the paired samples *T*-test. The test results are shown in Table 9.

Table 9

*The Results of Paired Samples *T*-test*

Sample	Paired differences					<i>t</i>	df	Sig. (2-tailed)
	Mean	Std. dev.	Std. error mean	95% confidence interval of the difference				
				Lower	Upper			
Pair 1 [*]	1.2188	5.3309	0.4076	2.0235	0.4140	2.99	170	0.003
Pair 2 ^{**}	0.6126	4.9508	0.3731	-0.1239	1.3491	1.64	175	0.102
Pair 3 ^{***}	0.7335	4.9598	0.3792	-0.0151	1.4823	1.93	170	0.055

Note. ^{*}: Part 1: The comparison between D sample and the P sample 1; ^{**}: Part 2: The comparison between D sample and the P sample 2; ^{***}: Part 3: The comparison between D sample and the P sample 3.

From the results of Table 9, we can see that, compared with all the paired samples, the *t*-value of paired samples *T*-test is greater than 1 and has a high significance level. Compared with the P sample 1, the significant level is the highest (greater than 1%), while compared with P sample 2, the significant level is not more than 10%, but nearly 10%. In other words, the significant level is the lowest when compared with P sample 2. The reason of the phenomenon is that the selecting standard of the P sample 2 is only one factor (shareholding level of controlling shareholders). P sample 3 considers industry factors based on the P sample 2, and the level of significance has been improved (greater than 10%). It shows that, in general, there are significant differences of the mean of CS between D sample and NO-D sample.

Combined with descriptive statistics, we know that the mean of CS in the downward performance sample is greater than paired samples. So we can say that the mean of CS in the downward performance sample is significantly greater than NO-D sample. The larger the other receivable is, the stronger the benefits transfer motivation is. Therefore, diversification motivation is benefits transfer.

Further Analysis of Benefits Transfer Motivation

For detailed analysis of the sample characteristics under the benefits transfer motivation, we classify the data by corporate nature, growth, firm size, and degree of diversification.

Table 10

The Results of the Related Indicators Classified by Corporate Nature

Indicator	N	Maximum	Minimum	Mean	Standard deviation
Other receivables/total assets (CS)					
Private	187	37.73	0.02	1.96	3.36
State-owned	100	17.78	0.03	2.99	3.61
Business numbers					
Private	187	9	2	3.71	1.61
State-owned	100	7	2	3.25	1.18
EI					
Private	187	1.86	0.00	0.66	0.40
State-owned	100	1.45	0.00	0.52	0.34
The degree of income impairment (absolute value)					
Private	187	3,037.50%	0.19%	180.22%	4.49
State-owned	100	11,650.00%	0.15%	291.77%	13.04

Table 10 shows the results of the related indicators analysis classified by corporate nature. The number of private enterprises (187) is greater than state-owned enterprises (100), indicating that it is more likely for private companies to have a downward performance. In other receivables indicators, the mean of CS in state-owned enterprises is greater than that in private enterprises, indicating that state-owned enterprises have stronger benefits transfer motivation than private enterprises. In terms of the degree of diversification, whether it is measured by business numbers or EI, the value in private enterprises is larger (the minimum of entropy index is 0.00, rounded result), indicating that private enterprises have a higher diversification degree. In terms of the degree of income impairment (measured by the difference between the operation results in 2012 and in 2011 divided by the operation results in 2011), the maximum and the mean are both greater in state-owned enterprises than that in private enterprises, indicating that state-owned enterprises who adopt diversification strategy have a greater degree of income impairment than private enterprises.

Table 11 shows the results of the related indicators analysis classified by growth. The enterprises are concentrated in naive stage (100) and recession stage (99), indicating that the growing environment has a great impact on downward performance. The high business risk and inadequate organizational structure of naive stage, the aging business processes, and high degree of mobility will bring about some diversification problems. In contrast, the decline in performance does not happen easily among diversified enterprises in growth stage and maturity stage. In other receivables indicators, the mean of CS in naive stage is the least, while the mean of CS in growth stage and maturity stage is greater, indicating that enterprises in naive stage do not have stronger benefits transfer motivation, and major shareholders or managers are more likely to transfer benefits in growth stage and

maturity stage. In terms of the degree of diversification, there are no large differences in different growth, indicating that there is no obvious connection between diversification degree and growth. In terms of the mean of income impairment degree, it is the smallest (171.94%) for enterprises in naive stage; for enterprises in maturity and recession stages, the values are greater (261.88% and 246.78% separately), indicating that enterprises in maturity and recession stages who adopt a diversification strategy have a greater degree of income impairment.

Table 11

The Results of the Related Indicators Classified by Growth

Indicator	<i>N</i>	Maximum	Minimum	Mean	Standard deviation
Other receivables/total assets (CS)					
Naive stage	100	10.40	0.06	2.04	2.44
Growth stage	27	9.57	0.20	2.70	2.56
Maturity stage	61	15.03	0.03	2.59	3.08
Recession stage	99	37.73	0.02	2.34	4.65
Business numbers					
Naive stage	100	9	2	3.74	1.53
Growth stage	27	9	2	3.30	1.51
Maturity stage	61	8	2	3.51	1.49
Recession stage	99	9	2	3.45	1.44
EI					
Naive stage	100	1.60	0.01	0.63	0.40
Growth stage	27	1.46	0.03	0.63	0.36
Maturity stage	61	1.34	0.00	0.59	0.37
Recession stage	99	1.86	0.00	0.60	0.39
The degree of income impairment (absolute value)					
Naive stage	100	3,037.50%	0.19%	171.94%	4.52
Growth stage	27	2,334.15%	0.29%	195.49%	4.96
Maturity stage	61	5,800.00%	1.26%	261.88%	8.26
Recession stage	99	11,650.00%	0.15%	246.78%	11.89

Table 12

The Results of the Related Indicators Classified by Firm Size

Indicator	<i>N</i>	Maximum	Minimum	Mean	Standard deviation
Other receivables/total assets (CS)					
Big firms	265	37.73	0.02	2.22	3.36
SMEs	22	15.03	0.06	3.53	4.60
Business numbers					
Big firms	265	9	2	3.58	1.50
SMEs	22	7	2	3.23	1.34
EI					
Big firms	265	1.86	0.00	0.62	0.39
SMEs	22	0.99	0.09	0.49	0.25
The degree of income impairment (absolute value)					
Big firms	265	11,650.00%	0.15%	221.12%	8.81
SMEs	22	1,100.00%	5.52%	194.60%	2.89

Table 12 shows the results of the related indicators analysis classified by firm size. The distinction standard of firm size is based on the “SME Type Standard” issued on July 4, 2011. Specific criteria are based on enterprise employees, operating income, and total assets indicators, combined with industry characteristics. In compliance with the standard, we distinguish small- and medium-sized enterprises (SMEs) from big firms.

The enterprises are concentrated in big size (92%), indicating that the decline in performance occurs mainly in big firms. In other receivables indicators, the mean of CS in SMEs is bigger than that in big firms, indicating that the diversification motivation of SMEs is more likely to be benefits transfer motivation. In terms of the mean of the income impairment degree, it is greater for big firms compared with SMEs ($221.12\% > 194.60\%$), indicating that big firms which adopt a diversification strategy have more obvious degree of income impairment.

Table 13

The Results of the Related Indicators Classified by Diversification Degree

Indicator	N	Maximum	Minimum	Mean	Standard deviation
Other receivables/total assets (CS)					
Low	84	15.03	0.02	1.99	2.67
Relatively low	66	14.94	0.07	2.17	2.74
Middle	64	12.56	0.06	2.44	2.72
High	73	37.73	0.06	2.74	5.12
The degree of income impairment (absolute value)					
Low	84	3,037.50%	1.26%	200.00%	5.08
Relatively low	66	11,650.00%	1.17%	343.59%	14.70
Middle	64	5,800.00%	0.29%	245.68%	7.72
High	73	1,551.56%	0.15%	105.18%	2.69

Table 13 shows the results of the related indicators analysis classified by diversification degree. In other receivables indicators, with the increase of the diversification degree, the mean of CS also increases, indicating that there is a positive correlation between the benefits transfer motivation and the diversification degree. In terms of the mean of income impairment degree, it is relatively greater for relatively low (343.59%) and middle (245.68%) degrees of diversification companies, indicating that companies with a middle degree of diversification have more obvious degree of income impairment.

The Summary of Benefits Transfer Motivation

Through descriptive statistics and paired samples *T*-test, we find that in the sample of the downward performance diversified companies, diversification motivations major on shareholders' benefits transfer motivation. Further analysis shows that there are some differences in the degree of diversification, benefits transfer motivation, and the degree of income impairment, when the sample is classified by corporate nature, growth stage, and firm size. The differences are more obvious in different corporate natures.

Descriptive Statistics Analysis of Diversification Motivation: Ability View

When diversified companies have a performance decline, and the decline is neither due to the adverse effects of the macro environment nor to the benefits transfer motivation, we can consider that its performance decline is due to the shortage of their own ability. In this paper, we choose the sample (150) whose other receivables is less than the mean (1.29) as the sample.

The main consideration of the ability level is from the structure of directors, supervisors and manager, board size, duality of chairman and CEO, and the ownership structure.

Table 14

The Analysis of Ability Level

Indicator	<i>N</i>	Maximum	Minimum	Mean	Standard deviation
The total number of directors, supervisors, and manager					
Low	49	37	12	19.29	5.31
Middle	49	30	13	19.20	4.62
High	52	35	12	20.85	5.18
Total	150	37	12	19.80	5.07
The average age of directors, supervisors, and manager					
Low	49	56	43	49.04	3.01
Middle	49	56	43	49.37	2.86
High	52	56	41	48.73	2.59
Total	150	56	41	49.04	2.81
The proportion of male among directors, supervisors, and managers					
Low	49	1	0.45	0.83	0.12
Middle	49	1	0.50	0.84	0.10
High	52	1	0.64	0.87	0.08
Total	150	1	0.45	0.85	0.10
Board size					
Low	49	9	3	5.90	1.23
Middle	49	11	3	5.94	1.27
High	52	10	3	6.00	1.22
Total	150	11	3	5.95	1.23
Duality of chairman and CEO					
Low	49	1	0	0.90	0.31
Middle	49	1	0	0.94	0.24
High	52	1	1	1	0
Total	150	1	0	0.95	0.23

Table 14 lists the analysis results. The average number of directors, supervisors, and manager is 19.80. Corresponding to the different degrees of income impairment, there is little change in the mean of the number; the average age of directors, supervisors, and manager is from 40 to 56, and the majority of directors, supervisors, and manager are male. Corresponding to the different degrees of income impairment, there is little change in the mean of the age and gender. In this paper, the board size does not include the number of independent directors. We find that there is an upward trend of board size with the degree of income impairment, but this upward trend is not very obvious. We also find that there is an upward trend of the duality of chairman and CEO with the degree of income impairment. In the sample of the highest degree of income impairment, all the companies set one person to be the chairman and CEO. Generally, when the company's chairman and CEO is the same person, the person's own ability has become an important factor restricting the development of the company. This person is also more likely to over-expansion and self-confidence to make diversification decisions which do not meet the actual situation of the company.

Table 15 presents the analysis results of the ownership structure. The differences of the company's ownership structure represent the differences of corporate governance level. And the results also reflect the abilities of the enterprise operators. With the share proportion of the largest shareholder, the lowest income impairment corresponds to the highest degree of shareholding (43.28%). There is no obvious rising or falling trend with the increase of income impairment; from the top 10 shareholders' shareholding perspective, it presents a falling trend with the increase of income impairment. That is to say, the degree of income impairment happens to be much larger with the less shareholding of the top 10 shareholders; the ownership concentration is measured by index Z. Index Z refers to the shareholding ratio between the first and the second largest shareholders in the company. The value of Z index is higher, the ownership concentration is bigger. According to Table 15, the sample group with the highest income impairment has the highest ownership concentration. Therefore, ownership concentration damages the effectiveness of corporate governance to some extent, which leads to the inefficiency of diversification strategy and the sharp impairment of the income.

Table 15

The Analysis of the Ownership Structure by the Degree of Income Impairment

Indicator	N	Maximum	Minimum	Mean	Standard deviation
Proportion of the largest shareholder					
Low	49	76.95	11.97	43.28	13.42
Middle	49	76.68	10.72	33.97	12.89
High	52	85.23	7.50	37.24	17.57
Total	150	85.23	7.50	38.14	15.23
The proportion of the top 10 shareholders					
Low	49	91.11	27.93	59.58	15.47
Middle	49	79.93	17.45	51.59	15.27
High	52	100.00	17.35	51.28	18.69
Total	150	100.00	17.35	54.09	16.93
Ownership concentration (Index Z)					
Low	49	157.28	1.00	22.94	32.44
Middle	49	207.24	1.01	16.32	32.76
High	52	608.79	1.01	38.91	96.85
Total	150	608.79	1.00	26.32	63.14

In conclusion, there is no clear correlation between the number, age, gender of corporate operators, and the degree of income impairment. To some extent, it also suggests that we should deeply analyze the effected factors of operator ability, rather than the surface indicators, such as age. There are some correlations between ownership concentration and the degree of income impairment. The company with higher ownership concentration will have most serious income impairment.

Conclusion

Through analysis, this paper comes to the following meaningful conclusions: (1) Diversified operation has exactly different reactions to the operating performance and market value. The degree of diversification is significantly and positively related to operating performance, while it is significantly and negatively related to the market value; (2) The macro environment will affect the implementation of the diversification strategy for some industries such as extractive industry, wood furniture industry, rubber industry, and the building industry;

(3) As to the sample of downward performance diversified companies, the benefits transfer (tunneling) motivation is an important consideration; and (4) The ownership concentration affects the degree of income impairment.

For future research direction, with the macro view, as the industry development trend and performance in different years have lots of differences, it will get different industry results with different years' data. In terms of the benefits transfer motivation, as the government continuously strengthens the control of the other receivables, it is worth to study whether there are other appropriate variables which can be the proxy for benefits transfer motivation. In terms of ability, as there is not a relatively fair measure frame of the management ability at present, this paper has less analysis about this aspect. It is worth to study further this issue in the future.

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