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Diversification and Corporate Performance: Evidence from China's Listed Energy Companies

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Abstract: Recently, China's energy industry has been continuously depressed due to a slowdown in its economic development. China's energy companies have made considerable efforts to promote their corporate performance to mitigate this performance decline and to ensure the sustainable development of China's energy industry, macro economy, society and environment. In this paper, the effects of two business strategies—industrial diversification and international diversification—on the performance of listed energy firms are empirically investigated. The empirical results show the following: (1) industrial diversification hinders corporate performance; (2) for industrially-diversified energy companies, related diversified strategies are more effective than unrelated diversified strategies; and (3) international diversification improves the performance of renewable energy firms, but hinders the performance of conventional energy firms. These results suggest that as economic conditions are not currently optimal, China's energy companies should pay more attention to their main businesses and generate more products to satisfy market demand.

Keywords: industrial diversification; international diversification; corporate performance; sustainable development; China

1. Introduction

China's energy industry plays an important role in China's economic, social and environmental development. First, China's energy industry, which includes national strategic and pillar industries, is responsible for domestic energy supply and is closely connected to the Chinese national economy. Energy supply conditions directly affect the sustainable development of the Chinese macro economy. Meanwhile, China's energy companies experience a high degree of government intervention and must assume more political responsibility for economic development, livelihood improvement and environmental conservation. Furthermore, by the end of 2015, the total value of China's listed energy companies accounted for roughly 10% of the value of China's A share market, and many energy stocks are also component stocks of stock indices. Fluctuations in China's energy stock prices will dramatically affect the overall stability of China's stock market. In addition, the development of renewable and clean energy in the energy industry furthers ecological sustainability in China by reducing carbon emissions and mitigating environmental deterioration. It follows that China's energy companies significantly shape the sustainable development of China's economy, society and environment.

However, since 2011, Chinese economic growth has slowed as China has entered the "new normal" economy. As the Chinese government implements a series of policies to optimize domestic production capacity and inventory, China's domestic energy demand continues to decline. Meanwhile, the

performance of China's energy firms continues to decline due to low domestic energy demand. Given the significance of the developing predicament faced by China's energy companies, it is now essential to identify ways to improve the corporate performance of these companies efficiently. Furthermore, corporate business strategies are some of the most direct and appreciable factors that can affect corporate performance. Corporate business strategies can be adjusted to affect corporate performance through the development of business philosophies, organization structures and product portfolios. This paper thus outlines ways to improve the performance of China's energy companies. More specifically, from relevant data available and on the basis of theories and previous studies, the paper investigates correlations between corporate business strategies and the performance of China's listed energy companies.

From relevant data available and on the basis of theories and previous studies, the paper explores corporate business strategies involving industrial and international diversification.

In relevant studies, most scholars declare that industrial diversification can decrease corporate value. Previous studies on the negative effects of industrial diversification take Tobin's Q as a proxy for corporate value [1,2]. Previous studies mainly interpret the negative effects of industrial diversification based on agency theory, internal capital markets and market microstructures. According to agency theory, managers do not have access to companies' residual claims, and so, managers can make decisions that damage corporate value to improve their own utility [3,4]. In such cases, managers have the incentive to diversify to reduce idiosyncratic risks and to seek private benefits. In general, managers can manage large companies [5] to increase their compensation [6]. Industrial diversification enhances managers' abilities to disperse risks [7] and increases their value to companies [8]. This creates the following outcome: managers that continue to insist on industrial diversification strategies though industrial diversification will undermine the financial positioning of the company's shareholders. In reference to the internal capital market, some scholars believe that industrial diversification could lead to inefficient resource allocation between different departments within companies [9–12]. Relevant studies verify two reasons for the formation of inefficient internal capital markets in industrial diversified companies. On the one hand, driven by a need for power, executives can diversify their investments excessively through resource allocation, so that industrial diversification can result in the distortion of resource allocation in the company's internal capital market [10,13]; on the other hand, by dispersing company capital and efforts, industrial diversification can decelerate company operation responses to new external investment opportunities. Thus, diversified industrial companies are less sensitive to investment opportunities than specialized companies [1,13]. In reference to market microstructures, relevant studies focus on the interpretation of the negative effects of industrial diversification in accordance with information economics. In a capital market, the stock prices of specialized companies reflect companies' real operation conditions better than those of industrial diversified companies [14]. More information on operation conditions increases manager investment efficiency and reduces information asymmetries between companies and investors. Stock prices can bring managers valuable information so that insufficient information resulting from industrial diversification can result in corporate value loss [15]. Industrial diversification can result in low investment efficiency as a result of company capital and effort dispersal [16].

However, other studies show that industrial diversification can improve corporate performance [17–20]. In reference to the theory of internal capital markets, some scholars explain that industrial diversification can effectively alleviate companies' external financing constraints and insufficient funds by forming efficient internal capital markets. When a company has an efficient internal capital market, managers can bring idle capital to sectors in need of capital by adjusting internal capital allocation schemes. Efficient internal capital markets can improve corporate performance by investing more funds in projects with positive present value and high returns, resulting in efficient corporate operations [21]. In reference to the capital market, studies find that industrial diversification can create companies with high excess stock returns [22]. Maksimovic and Phillips (2002) find that diversified industrial companies can optimally allocate resources across segments based on the relative

efficiency of divisions [23]. Some other studies also show that industrial diversification can increase corporate value [24,25] and productivity [26,27]. In practice, the benefits of tax saving from industrial diversification are ubiquitous in diversified industrial companies [1].

In addition, over the last decade, some scholars have explained that previous relevant studies fail to take industrial heterogeneity into consideration. Santalo and Becerra (2008) declare that whether industrial diversification will deteriorate company performance is dependent on competitive industrial environments [28]. Due to lock-up problems, industrial diversification damages corporate performance when specialized companies dominate an industry and vice versa. Meanwhile, other studies show that some factors affect correlations between industrial diversification and corporate performance. Currently, more and more scholars are focusing on the effects of executives' characteristics on the relationship between corporate performance and business strategies. According to human capital theory, executive cognition, skills and preferences vary considerably due to differences in education background, gender and social connection [29–33]. These differences ultimately affect corporate performance by influencing executives' strategic decisions [34].

There are few empirical studies on correlations between international diversification and corporate performance. According to existing studies, however, international diversification is also a two-edged sword. On the one hand, when huge opportunity costs are associated with industrial diversification, opportunity costs are very low or even zero when core technologies are used in new markets. At the same time, companies can gain more from differences in product prices, markets and tax policies between different countries. Furthermore, investors always give priority to diverse international portfolios [35]. On the other hand, international diversification can also deteriorate corporate performance due to the limited efficiency of internal capital markets, agency problems and an increase in management complexities [36,37]. In addition, some studies show that the effects of international diversification on corporate performance also depend on company characteristics (e.g., size [38], capital structure [39,40] and corporate governance [41–43]).

On methodology, relevant studies have reviewed a hundred years of methods from theoretical research to survey and empirical research. In earlier stages, relevant theories (e.g., on economies of scope and agency) were developed to explain correlations between corporate performance and business strategies [44–47]. Later, some scholars began to verify the accuracy of these theories by surveying companies [48]. With the rapid development of econometry and information disclosure, several empirical studies were conducted by econometry to validate general rules in practice [16,23,37]. Currently, large amounts of data and econometric methods are applied in empirical studies to solve complex problems (e.g., endogeneity [25,28]). However, the mechanism and evidence on the effects of industrial and international diversification are far from conclusive.

On the whole, the development of relevant studies of China is far behind that of the United States and Europe. Relevant studies on China mainly focus on the correlation between diversification and corporate performance for all listed companies [49–52]. Most of these studies show that diversification can damage corporate value or performance. Other studies on other factors affecting the linkage between corporate performance and business strategy focus on ownership structures [53,54]. However, few studies have taken industrial heterogeneity and human capital into consideration. With respect to the important role of China's energy companies in China's economy and capital market, it is important to investigate the correlation between industrial strategies and the two corporate business strategies employed in China's listed energy companies. This paper's results could provide China's energy companies with scientific guidance on the proper selection of sustainable business strategies. The efficient operation of China's energy companies can also help ensure the sustainable development of China's energy industry, macro economy, society and environment.

The remainder of the paper is organized as follows. Section 2 gives a brief explanation of the analytical logic applied. Section 3 introduces the model and data used. Section 4 presents the study results and relevant interpretations. Section 5 discusses study implications, and the final section provides a conclusion.

2. Analytical Framework

Based on the two main company business strategies applied, this paper investigates the correlation between business strategies and corporate performance.

First, the paper constructs alternative proxies to measure industrial and international diversification strategies. The paper then investigates the correlation between business strategies and corporate performance. At the same time, the paper tests the robustness of the results against alternative diversification proxies. Furthermore, Campa and Kedia (2002) and Villalonga (2004) declare that companies do not randomly become industrially diversified, but rather endogenously choose to do so [25,55]. To enhance the robustness of these results, the paper uses a firm fixed effect regression with the subsample to eliminate the effects of the endogeneity of diversification decisions. The subsample includes companies that reported a change in the number of segments during the sample period (Few companies included in the sample report a change of market distribution, and thus, the paper only carries out a robustness test on the endogeneity of industrial diversification decisions.) [28]. The paper strictly focuses on the within-firm correlation between changes in performance and changes in diversification. In addition, the paper analyzes differences in the correlation between business strategies and corporate performance among conventional and renewable energy companies.

3. Methodology

3.1. Sample Selection

The sample covers the period running from the first quarter of 2009 to the third quarter of 2015. The sample includes the listed firms in the "coal", "oil and refinery", "wind power" and "solar power" sectors according to the CITIC Industrial Classification Standard developed by CITIC Group Corporation (The paper uses listed companies in four energy sectors due to China's energy structure, sectorial market levels and disclosed company information.). Of these firms, the paper first eliminates special-treated firms (Special-treated firms have suffered losses for two consecutive fiscal years.) marked as "ST" and "*ST", "other refinery" firms listed under the "oil and refinery" sector and firms with no connections to the energy industry. Firms in the "wind power" and "solar power" sectors are counted as the renewable energy industry, and firms in the "coal" and "oil and refinery" sectors are counted as the conventional energy industry. As a result, the paper compiled a sample of 102 firms. Accounting and product information are available from the WIND database, which is a financial terminal developed by Wind Info (www.wind.com.cn), and firm financial reports. The accounting database (WIND) is commercially available from the Chinese Academy of Sciences.

Firms are considered as industrially diversified (multi-segment) if they operate in more than one ISIC (International Standard Industrial Classification, Revision 4) three-digit code industry. Single-segment and specialized firms are those that operate within a single ISIC three-digit code industry. Moreover, diversified firms operating within a single ISIC two-digit code are considered industrially diversified, and diversified firms are considered unrelated to industrial diversification if they operate within more than one ISIC two-digit code industry. Firms are considered internationally diversified when they operate in overseas and domestic markets.

In addition, the paper eliminates and corrects outliers with rates of change that exceed 50%.

3.2. Measures of Industrial Diversification, International Diversification and Corporate Performance

In measuring industrial diversification, the paper constructs four alternative proxies. In the industrial diversification proxies, the first three measures are sales-based entropy (*EI*), the adjusted Herfindahl index (*HHI*) and the specialization ratio (*Rs*) (see Table 1). Another measure (*Segment*) measures the total number of segments in which a certain firm engages. In addition, *Related* is a dummy variable that takes a value of 1 if a firm engages in related industrial diversification and a value of 0 otherwise.

Table 1. Indicators of different business strategies.

Business Strategy	Proxies	Definition
Industrial Diversification	*EI*	$EI = \sum_{i=1}^{N} [P_i \cdot ln\,(1/P_i)]$
	HHI	$HHI = 1 - \sum_{i=1}^{N} P_i^2$
	Rs	*Rs* is the proportion of sales of the most major segment of a certain firm.
	Segment	*Segment* is the total number of sectors of a certain firm based on ISIC three-digit industries.
	Related	*Related* is a dummy variable that takes a value of 1 if a firm engages in related industrial diversification and a value of 0 otherwise.
International Diversification	*Roverseas*	*Roverseas* is the proportion of the overseas sales of a certain firm.
	MarketE	$MarketE = \sum_{i=1}^{N} [Q_i \cdot ln\,(1/Q_i)]$
	MarketH	$MarketH = 1 - \sum_{i=1}^{N} Q_i^2$

Notes: P_i is the proportion of the sales categorized under a single ISIC three-digit code industry in a certain firm. Q_i is the proportion of sales of a firm's overseas business.

In measuring international diversification, the paper uses three alternative proxies. Among these proxies, *Roverseas* is the proportion of the overseas sales of a certain firm. The other two measures are the entropy (*MarketE*) and Herfindahl index (*MarketH*) based on overseas sales.

Higher values of *EI*, *HHI*, *Segment*, *MarketH*, *MarketE* and *Roverseas* denote higher levels of diversification. Higher values of *Rs* denote lower levels of industrial diversification. Calculation methods and explanations of these proxies are shown in Table 1.

Within the scope of corporate performance and value management, the corporate evaluation system is a core issue. Generally speaking, the evaluation of corporate performance considers many indicators that reflect corporate profitability, solvency and growth, and so on [12,16,56]. According to corporate performance and value management principles, companies should optimize their operations to maintain good performance in all respects. However, the paper only used returns on assets (*ROA*), chief returns on assets (*CROA*), market-to-book (*M2B*) and Tobin's Q (*TQ*) as proxies of corporate performance, as these four proxies reflect corporate profitability, which is the basis of a company's survival and growth in competitive markets.

ROA and *CROA* measure a firm's level of investment efficiency. *ROA* is the ratio of earnings before interest and tax (*EBIT*) to total assets for a certain period. *CROA* is the ratio of the sum of operating revenue and interest expenses to total assets for a certain period. *ROA* can alleviate the effects of corporate capital structures and tax policies on net returns, and *CROA* can also eliminate profit manipulation in non-core businesses for net returns. *M2B* and *TQ* represent a firm's market value. *M2B* is the ratio of the market value to the book value of shareholder equity. *TQ* is the ratio of the sum of the market value of shareholder equity and the book value of liabilities to total assets. Market value proxies reflect capital market expectations of future firm profit and growth.

As many studies show, company market value is not usually consistent with corporate fundamentals [33,57]. The paper uses this indicator to verify the empirical results based on the perspectives of corporate fundamentals and capital markets. In addition, all corporate performance proxies are adjusted by subtracting industrial medians.

3.3. Model

The paper constructs the regression models as follows. Equation (1) examines the correlation between business strategies and corporate performance, and Equation (2) analyzes differences in the correlation above among conventional and renewable energy firms.

$$\begin{aligned} Performance \quad &= \alpha + \beta_1 \cdot Ln\,(asset) + \beta_2 \cdot EBIT\_Sales + \beta_3 \cdot Exp\_Sales \\ &+ \beta_4 \cdot Diversification \end{aligned} \tag{1}$$

$$\begin{aligned} Performance \quad &= \alpha + \beta_1 \cdot Ln\,(asset) + \beta_2 \cdot EBIT\_Sales + \beta_3 \cdot Exp\_Sales \\ &+ \beta_4 \cdot Diversification + \beta_5 \cdot Industry \cdot + \beta_6 \cdot Diversification \cdot Industry \end{aligned} \tag{2}$$

where *Diversification* denotes business strategy proxies and *Industry* is the dummy variable, which takes a value of one if a firm operates in the renewable energy industry and a value of zero if a firm operates in the conventional energy industry. The interaction between *Diversification* and *Industry* reflects the effects of different business strategies on the performance of listed firms in different energy industries.

We use three variables to control for the effects of firm characteristics. The first variable is the natural logarithm of the total asset (*Ln(asset)*), which measures a firm's size. The second variable is *EBIT*, which measures a firm's profitability (*EBIT_Sales*). The third variable is the capital expenditure, which measures a firm's investments (*Exp_Sales*). For example, larger companies can adjust or improve their operations with access to more resources, such as cash flows, potentially rendering operations more efficient. Therefore, *EBIT_Sales* and *Exp_Sales* are scaled by firm's sales to alleviate the fixed effects of firm size.

3.4. Summary Statistics

As Table 2 shows, the investment efficiency and profitability of China's conventional energy companies exceed that of China's renewable energy companies. However, the market value of China's renewable energy companies is higher than that of China's conventional energy companies, showing that the capital market holds appreciated expectations of renewable energy companies. China's conventional energy companies are larger than renewable energy companies.

Table 2. Descriptive statistics on listed Chinese energy firm characteristics.

	Coal			**Oil**			**Wind**			**Solar**		
	N	**Mean**	**Median**	***N***	**Mean**	**Median**	***N***	**Mean**	**Median**	***N***	**Mean**	**Median**
ROA	313	2.13	1.44	141	3.07	2.19	184	1.35	1.32	238	1.39	1.55
CROA	288	0.03	0.03	122	0.04	0.03	154	0.02	0.02	175	0.01	0.02
M2B	313	4.12	1.82	141	3.00	2.64	184	3.21	2.60	238	3.95	3.25
TQ	313	1.81	1.39	141	2.13	1.83	184	1.87	1.66	238	2.50	2.08
Ln(asset)	313	23.27	23.32	141	23.27	22.67	184	22.38	22.13	238	21.94	21.92
EBIT_Sales	312	8.18	8.13	141	11.12	5.71	184	7.11	7.45	238	2.95	9.67
Exp_Sales	305	0.13	0.10	137	0.20	0.05	183	0.18	0.08	238	0.25	0.13
HHI	272	0.30	0.33	120	0.31	0.32	149	0.21	0.17	184	0.22	0.15
EI	272	0.52	0.56	120	0.53	0.32	149	0.36	0.29	184	0.38	0.30
Segment	272	1.88	2.00	120	2.85	3.00	144	1.79	2.00	179	1.91	2.00
Rs	272	0.79	0.79	125	0.74	0.76	144	0.86	0.90	179	0.85	0.92
Related	273	0.33	0.00	123	0.31	0.00	144	0.46	0.00	179	0.54	1.00
MarketH	270	0.03	0.00	117	0.13	0.01	143	0.20	0.16	175	0.27	0.29
MarketE	270	0.05	0.00	117	0.21	0.02	140	0.28	0.28	175	0.47	0.47
Roverseas	270	0.02	0.00	117	0.14	0.00	140	0.15	0.09	175	0.29	0.22

In an industrial structure, conventional energy companies tend to diversify more than renewable energy companies regardless of *EI*, *HHI*, *Segment* and *Rs*. For industrially-diversified energy companies, the business strategies of renewable energy companies are more closely related than those of conventional energy companies. From a business distribution perspective, China's renewable energy companies are more internationalized than China's conventional energy firms. China's large

overseas market for renewable energy companies may explain their position as original equipment manufacturers (OEMs) for European and American countries.

4. Results

4.1. Industrial Diversification and Corporate Performance

The results shown in Table 3 demonstrate that the coefficients of *EI*, *HHI* and *Segment* are significantly negative and that the coefficient of *Rs* is significantly positive regardless of the proxies of investment efficiency and market value. The results indicate that industrial diversification will hinder the performance of China's listed energy firms for three main reasons.

First, China's energy industry is a national strategic industry. One of the major goals of China's conventional energy companies is to secure the domestic energy supply, while China's renewable energy companies mainly aim to diversify domestic energy structures to mitigate the pressures of climate change. In other words, China's energy companies not only pursue excellent performance, but are also responsible for delivering national strategies for economic development and social progress. Thus, China's energy companies cannot compete freely through industrial diversification to maximize their profits as companies in other industries do. Taking the China National Petroleum Corporation (CNPC) (CNPC is China's largest oil and gas producer and supplier and its headquarter is located in Beijing ,China) as an example, the CNPC insisted on dedicating oil supply to Chinese economic development even though the company's profits have been reduced drastically as a result of low global oil prices since 2014. Furthermore, with such limited profits, the CNPC invested more than 1.3 billion RMB in social welfare in 2015. Thus, national and social responsibilities render China's energy companies significantly different from companies operating in other sectors.

Second, the energy industry is heavily dependent on capital. Energy companies require sufficient capital to maintain production, carry out research and mitigate the adverse effects of profit fluctuations resulting from huge sunk cost uncertainties. In China's energy industry, companies like CNPC are rare, and most companies lack funds. Together with long construction periods, serious uncertainties regarding returns on investment and serious external financing constraints, industrial diversification will affect the performance and sustainable development of China's energy companies by dispersing companies' limited resources and by affecting each company's core competitiveness. For example, in China's coal sector, Jizhong Energy Resources Co. Ltd. (JZER) (JZER's headquarters is located in Xingtai City, Heibei Province, China) suffered huge losses from its industrial diversification. When the coal price fell sharply in 2012, JZER diversified its investments into the pharmaceutical, aviation, electricity, chemical, manufacturing and logistics sectors to alleviate the adverse effects of the depressed coal market. However, due to a lack of professionals, JZER's aviation businesses lost 200, 500 and 300 million RMB.

Third, due to the long-term state-owned monopoly over China's energy industry, the core competitiveness of China's energy companies is still incapable of facilitating industrial diversification. Industrial diversification is likely to lead to failure if new businesses do not focus on their own strengths.

Moreover, in industrial diversified energy companies, the performance of related diversified firms is significantly better than that of unrelated diversified firms (see Columns 5 and 10 in Panels A and B of Table 3). The causes for this result are two-fold. On the one hand, segments of related diversified industrial companies can produce remaining inputs that can be utilized by other segments. According to the theory of scope economics, remaining inputs can be efficiently converted into company joint costs to reduce the costs of separate production in these segments and to improve corporate performance. On the other hand, with single industry risks forbidden, related industrial diversification could save energy and costs in corporate management and may ultimately benefit corporate performance.

We did not find significant differences in the correlation between industrial diversification and corporate performance among conventional and renewable energy firms.

Table 3. Industrial diversification and energy company performance regression results.

Panel A: Independent Variables Are Investment Efficiency Proxies										
	ROA					***CROA***				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
Intercept	−0.0823 ***	−0.0848 ***	−0.0729 ***	−0.0119 ***	−0.0756 ***	−0.1331 ***	−0.1346 ***	−0.1327 ***	−0.1538 ***	−0.1320 ***
	(0.0203)	(0.0203)	(0.0198)	(0.0238)	(0.0223)	(0.0238)	(0.0238)	(0.0235)	(0.0269)	(0.0263)
Ln(asset)	0.0045 ***	0.0046 ***	0.0042 ***	0.0046 ***	0.0032 ***	0.0066 ***	0.0067 ***	0.0067 ***	0.0067 ***	0.0057 ***
	(0.0009)	(0.0009)	(0.0009)	(0.0009)	(0.0010)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)
EBIT_Sales	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Exp_Sales	−0.0120 ***	−0.0120 ***	−0.0119 ***	−0.0121 ***	−0.0122 ***	−0.0130 ***	−0.0130 ***	−0.0128 ***	−0.0129 ***	−0.0131 ***
	(0.0033)	(0.0033)	(0.0034)	(0.0033)	(0.0035)	(0.0037)	(0.0037)	(0.0037)	(0.0037)	(0.0039)
EI	−0.0142 ***					−0.0066				
	(0.0033)					(0.0037)				
HHI		−0.0274 ***					−0.0141 *			
		(0.0060)					(0.0067)			
Segment			−0.0050 ***					−0.0033 **		
			(0.0013)					(0.0015)		
Rs				0.0330 ***					0.0170 *	
				(0.0073)					(0.0081)	
Related					0.0119 ***					0.0070
					(0.0031)					(0.0037)
N	696	696	696	701	633	582	582	582	587	536
Adj_R^2	0.6182	0.6197	0.6162	0.6187	0.5991	0.6309	0.6169	0.6301	0.6315	0.6036

Table 3. *Cont.*

Panel B: Independent Variables Are Market Value Proxies										
	TQ					***M2B***				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
Intercept	5.7707 ***	5.6532 ***	6.0171 ***	4.8970 ***	5.3864 ***	7.3444 ***	7.2883 ***	7.3796 ***	7.1762 ***	7.2040 ***
	(0.5777)	(0.5767)	(0.5649)	(0.6771)	(0.5781)	(1.1968)	(1.1985)	(1.1675)	(1.4036)	(1.2512)
Ln(asset)	−0.2246 ***	−0.21780 ***	−0.2317 ***	−0.2217 ***	−0.2292 ***	−0.2931 ***	−0.2900 ***	−0.2934 ***	−0.2932 ***	−0.3021 ***
	(0.0262)	(0.0261)	(0.0259)	(0.0261)	(0.0249)	(0.0542)	(0.0543)	(0.0536)	(0.0542)	(0.0539)
EBIT_Sales	0.0029 ***	0.0028 ***	0.0031 ***	0.0028 ***	0.0040 ***	0.0121 ***	0.0121 ***	0.0121 ***	0.0120 ***	0.0146 ***
	(0.0010)	(0.0010)	(0.0010)	(0.0010)	(0.0010)	(0.0020)	(0.0020)	(0.0020)	(0.0020)	(0.0021)
Exp_Sales	0.0475	0.0504	0.0497	0.0444	0.0443	0.4851 ***	0.4862 **	0.4861 ***	0.4844 ***	0.5305 ***
	(0.0952)	(0.0949)	(0.0954)	(0.0948)	(0.0917)	(0.1972)	(0.1972)	(0.1973)	(0.1965)	(0.1986)
EI	−0.3499 ***					−0.078				
	(0.0947)					(0.1962)				
HHI		−0.7240 ***					−0.1878			
		(0.1696)					(0.3525)			
Segment			−0.1191 ***					−0.0317		
			(0.0370)					(0.0764)		
Rs				0.8027 ***					0.1561	
				(0.2082)					(0.4317)	
Related					0.3280 ***					0.0490
					(0.0805)					(0.1741)
N	696	696	696	701	633	696	696	696	701	633
Adj_R^2	0.1928	0.198	0.189	0.1932	0.1831	0.1123	0.1125	0.1123	0.1115	0.1178

Notes: *, ** and *** denote significance at 10%, 5% and 1%, respectively.

4.2. International Diversification and Corporate Performance

Overall, the paper found no significant correlations between the international diversification and performance of China's listed energy companies. However, international diversification can improve the performance of renewable energy firms, but can also damage the performance of conventional energy firms (see the *Roverseas* coefficient in Table 4).

Among China's conventional energy companies, coal companies have few overseas markets, while oil companies have access to several offshore businesses. In the oil industry, China's oil offshore business is mainly dominated by China's three state-owned oil companies. Recently, a few private oil companies entered overseas oil markets and have limited overseas market shares. China's renewable energy industry is dominated by private companies, which gain much from European, American and Japanese markets.

However, there have recently been great risks associated with the offshore business transactions of China's energy companies. At first, oil exporter geopolitics severely affected Chinese energy company profits. For example, the CNPC almost lost its local capital with civil strife and local wars in Libya, Syria, Sudan and Iraq, and the nationalization of oil resources in Venezuela damaged the profits of China's oil companies dramatically. Furthermore, China's oil companies lack sufficient information on offshore markets. Incomplete information on legal and fiscal policies and resources can have unfavorable effects on the overseas production and operation of China's oil and gas companies. In addition, the overseas projects of many China's oil companies suffer serious losses from the poor circulation of corporate resources and the sharp decline in global oil prices. For instance, the total profits of one of China's private oil companies, Metro Energy Company Ltd. (Metro's headquarters is located in Hangzhou City, Zhejiang Province, China), are 246 million yuan, which is much less than expected. This has mainly been attributable to a delay of oil and gas projects due to poor cash flows and unfavorable market environments with low global oil price and dollar appreciation. These factors create large fluctuations in the corporate performance of China's conventional energy companies in offshore markets. The increase in the proportion of overseas business will damage the performance of China's conventional energy companies.

For China's renewable energy firms, domestic market capacity is limited due to infrastructure construction imperfections and power grid connections. The offshore market is the main source of income for China's renewable energy firms. Over the last ten years, overseas business for China's renewable energy companies mainly focused on the production of equipment and relevant raw materials for power generation. The extension of the offshore market will improve the performance of China's renewable energy companies by mitigating product overstocking and accelerating capital circulation.

This shows that the effects of international diversification on the performance of China's energy companies are dependent on companies' external market conditions.

4.3. Robustness Test

In the above analysis, the paper verifies the stability of our results using alternative diversification indicators. However, these results may be disturbed by endogeneity caused by energy companies' industrial diversification decisions as explained in Section 2. For example, the performance of specialized energy companies is worse than that of other companies in the same industry, and companies engage in industrial diversification to identify other opportunities. Then, poor corporate performance is very likely caused by a company's characteristics rather than by industrial diversification. Thus, in this section, the paper aims to eliminate the endogeneity disturbance caused by energy firms' industrial or international diversification decisions by running the same model in Section 4.1 with a subsample of companies reporting a change in the number of segments during the sample period [28].

Table 4. Regression results on international diversification and energy company performance.

	ROA			*CROA*			*TQ*			*M2B*		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
Intercept	−0.0393	−0.0411	−0.0453	−0.1005 ***	−0.1025 ***	−0.1057 ***	7.6291 ***	7.6422 ***	7.2690 ***	8.6740 ***	8.5482 ***	8.7498 ***
	(0.0242)	(0.0243)	(0.0235)	(0.0292)	(0.0293)	(0.0281)	(0.6031)	(0.6051)	(0.5834)	(1.3211)	(1.3255)	(1.2774)
Ln(asset)	0.0019	0.0019	0.0021	0.0046 ***	0.0047 ***	0.0048 ***	−0.3145 ***	−0.3151 ***	−0.2972 ***	−0.3491 ***	−0.3429 ***	−0.3522 ***
	(0.0011)	(0.0011)	(0.0010)	(0.0013)	(0.0013)	(0.0012)	(0.0262)	(0.0263)	(0.0252)	(0.0574)	(0.0576)	(0.0551)
EBIT_Sales	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0030 ***	0.0030 ***	0.0029 ***	0.0120 ***	0.0120 ***	0.0120 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0009)	(0.0009)	(0.0009)	(0.0020)	(0.0020)	(0.0020)
Exp_Sales	−0.0125 ***	−0.0123 ***	−0.0125 ***	−0.0126 ***	−0.0125 ***	−0.0126 ***	0.0635	0.0662	0.0651	0.5514 ***	0.5628 ***	0.5433 ***
	(0.0036)	(0.0036)	(0.0035)	(0.0038)	(0.0039)	(0.0038)	(0.0884)	(0.0886)	(0.0882)	(0.1937)	(0.1941)	(0.1931)
MarketH	−0.0019			−0.0134			0.1964			−1.5252		
	(0.0154)			(0.0164)			(0.3827)			(0.8383)		
MarketE		−0.0031			−0.0105			0.1339			−1.1486 *	
		(0.0104)			(0.0111)			(0.2595)			(0.5683)	
Roverseas			−0.0159			−0.0272 *			−0.5043			−1.7309 **
			(0.0131)			(0.0139)			(0.3268)			(0.7156)
Industry	−0.0059	−0.0071	−0.0054	−0.0073	−0.0092 *	−0.0099 **	−0.5689 ***	−0.5845 ***	−0.5634 ***	−0.8522 ***	−0.9286 ***	−0.9098 ***
	(0.0039)	(0.0040)	(0.0035)	(0.0045)	(0.0045)	(0.0040)	(0.0972)	(0.0989)	(0.0876)	(0.2129)	(0.2166)	(0.1918)
*MarketH * Industry*	0.0157			0.0140			0.4461			1.9233		
	(0.0189)			(0.0209)			(0.4705)			(1.0308)		
*MarketE * Industry*		0.0145			0.0157			0.2942			1.5524 **	
		(0.0125)			(0.0137)			(0.3109)			(0.6810)	
*Roverseas * Industry*			0.0264			0.0374 *			1.0473 ***			2.3722 ***
			(0.0158)			(0.0169)			(0.3923)			(0.8589)
N	683	683	683	573	573	573	683	683	683	683	683	683
Adj_R^2	0.5811	0.5819	0.5819	0.6026	0.6031	0.6056	0.2095	0.2101	0.2123	0.1291	0.1310	0.1341

Notes: *, ** and *** denote significance at 10%, 5% and 1%, respectively.

Table 5. Regression results on industrial diversification and energy company performance with company fixed effects.

Panel A: Independent Variables Are Investment Efficiency Proxies										
	ROA					***CROA***				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
Intercept	−0.1230 ***	−0.1143 ***	−0.0945 ***	−0.1585 ***	−0.0985 ***	−0.1524 ***	−0.1573 ***	0.1413 ***	−0.1747 ***	−0.1600 ***
	(0.0316)	(0.0313)	(0.0304)	(0.0355)	(0.0327)	(0.0392)	(0.0394)	(0.0388)	(0.0427)	(0.0396)
Ln(asset)	0.0063 ***	0.0058 ***	0.0051 ***	0.0062 ***	0.0042 ***	0.0069 ***	0.0072 ***	0.0067 ***	0.0070 ***	0.0069 ***
	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0018)	(0.0018)	(0.0017)	(0.0018)	(0.0017)
EBIT_Sales	0.0011 ***	0.0011 ***	0.0011 ***	0.0014 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***	0.0011 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Exp_Sales	−0.0101 ***	−0.0102 ***	−0.0100 ***	−0.0102 ***	−0.0112 ***	−0.0127 ***	−0.0127 ***	−0.0123 ***	−0.0127 ***	−0.0125 ***
	(0.0037)	(0.0037)	(0.0037)	(0.0037)	(0.0038)	(0.0042)	(0.0042)	(0.0042)	(0.0042)	(0.0042)
HHI	−0.0309 ***					−0.0076				
	(0.0085)					(0.0054)				
EI		−0.0148 ***					−0.0180 *			
		(0.0046)					(0.0100)			
Segment			−0.0053 ***					−0.0045 *		
			(0.0018)					(0.0021)		
Rs				0.0369 ***					0.0187	
				(0.0101)					(0.0118)	
Related					0.0111 ***					0.0087
					(0.0043)					(0.0050)
N	415	415	415	420	420	356	356	356	361	361
Adj_R^2	0.6825	0.6804	0.679	0.682	0.6569	0.6572	0.6584	0.6596	0.657	0.6584

Table 5. *Cont.*

Panel B: Independent Variables Are Market Value Proxies										
	TQ					***M2B***				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
Intercept	5.4795 ***	5.4795 ***	6.1997 ***	4.6375 ***	5.7246 ***	7.0142 ***	6.8636 ***	6.9093 ***	7.0392 ***	6.6874 ***
	(0.8092)	(0.8092)	(0.7786)	(0.9079)	(0.8176)	(1.8986)	(1.9229)	(1.8394)	(2.1520)	(1.9183)
Ln(asset)	−0.2087 ***	−0.2087 ***	−0.2387 ***	−0.2133 ***	−0.2455 ***	−0.2982 ***	−0.2895 ***	−0.2939 ***	−0.2943 ***	−0.2826 ***
	(0.0370)	(0.0370)	(0.0352)	(0.0364)	(0.0357)	(0.0858)	(0.0873)	(0.0827)	(0.0857)	(0.0838)
EBIT_Sales	0.0031 ***	0.0031 ***	0.0034 ***	0.0031 ***	0.0037 ***	0.0143 ***	0.0142 ***	0.0142 ***	0.0142 ***	0.0142 ***
	(0.0010)	(0.0010)	(0.0010)	(0.0010)	(0.0010)	(0.0023)	(0.0023)	(0.0023)	(0.0023)	(0.0023)
Exp_Sales	0.1153	0.1153	0.117	0.1113	0.0940	0.4769 *	0.4784 *	0.4762 *	0.4771 *	0.4932 *
	(0.0952)	(0.0952)	(0.0958)	(0.0947)	(0.0959)	(0.2266)	(0.2267)	(0.2268)	(0.2252)	(0.2249)
HHI	−0.7767 ***					0.07472				
	(0.2168)					(0.2774)				
EI		−0.7767 ***					−0.01676			
		(0.2168)					(0.5173)			
Segment			−0.1271 ***					0.02156		
			(0.0457)					(0.1081)		
Rs				0.9042 ***					−0.09491	
				(0.2590)					(0.6166)	
Related					0.2927 ***					0.0303
					(0.1069)					(0.2508)
N	415	415	415	420	420	415	415	415	415	420
Adj_R^2	0.2167	0.2073	0.2071	0.2137	0.1535	0.1049	0.1047	0.1048	0.1045	0.1051

Notes: * and *** denote significance at 10% and 1%, respectively.

The results shown in Table 5 demonstrate that the regression results of the subsample are consistent with those shown in Table 3, though the significance of *CROA* and *M2B* coefficients decreases (see Columns 6, 7, 8, 9 and 10 in Panels A and B of Table 5). The test results show that our results are robust and that industrial diversification's reverse effects are not a result of industrial diversification decision endogeneity.

5. Discussion and Implications

China's energy companies, particularly the small private energy companies with no government funds, are not suited to industrial diversification. Famous enterprises in developed countries almost adapt from specialization to diversification first, but refocus on their core businesses in the end. Thus, China's energy companies could adopt related industrial diversification schemes based on their core businesses to avoid industrial risks and to identify other growth opportunities.

It has been a passive choice of China's energy companies to extend offshore markets via international diversification. For China's conventional energy companies, and especially for Chinese oil companies, domestic oil and gas resources are limited and subjected to poor development conditions. Thus, China's oil companies must extend offshore markets to ensure domestic energy supplies and to in turn promote the sustainable development of the Chinese economy. Occasionally, the extension of offshore markets can involve political cooperation between the Chinese government and the governments of other countries. In turbulent offshore markets, China's oil companies can suffer losses at any time. For China's renewable energy companies, due to the limited market capacity of China's domestic renewable energy power generation sector, manufacturers of power generation and equipment will need to secure their income by continually exporting most of their products to Europe and America. Therefore, international diversification will be one of the main strategies employed by Chinese energy companies over the next few years. In this case, state-owned energy companies may solicit national government support to spread risks to a particular country or market through additional international diversification in more countries; with limited capital and poor core competencies, private energy companies could share and avoid overseas risks by establishing multi-party cooperation and by following state-owned energy companies.

Thus, by selecting business strategies based on companies' strengths and market circumstances, China's energy companies could achieve sustainable development.

6. Conclusions

This paper investigates the impacts of industrial and international diversification strategies on the performance of China's listed energy firms. The paper first shows that industrial diversification has negative effects on corporate performance. Moreover, due to the varying conditions of offshore markets, international diversification could improve the performance of renewable energy firms, but hinder the performance of conventional energy firms. In addition, the paper conducted a robustness test with alternative variables and subsamples to verify these results.

According to the results presented, China's energy firms should adopt business strategies based on their own strengths and market circumstances to improve corporate performance. The effective operation of China's energy companies could also promote the sustainable development of the Chinese macro economy, society and environment.

Due to data availability limitations, the paper does not investigate the effects of governance structures, executive characteristics and external circumstances on the linkage between business strategies and performance for China's energy companies. These issues may be researched in the future. In addition, it would be interesting to verify whether vertical integration, another corporate business strategy, could be applied in China's energy companies.

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References

1. Berger, P.G.; Ofek, E. Diversification's effect on firm value. *J. Financ. Econ.* **1995**, *37*, 39–65. [CrossRef]
2. Comment, R.; Jarrell, G.A. Corporate focus and stock returns. *J. Financ. Econ.* **1995**, *37*, 67–87. [CrossRef]
3. Aggarwal, R.K.; Samwick, A.A. Why do managers diversify their firms? Agency reconsidered. *J. Financ.* **2003**, *58*, 71–118. [CrossRef]
4. Dennis, D.J.; Denis, D.K.; Sarin, A. Agency problems, equity ownership and corporate diversification. *J. Financ.* **1997**, *52*, 135–160. [CrossRef]
5. Jensen, M.C. Agency cost of free cash flow, corporate finance, and takeovers. *Am. Econ. Rev.* **1986**, *76*, 323–329.
6. Jensen, M.C.; Murphy, K.J. Performance pay and top-management incentives. *J. Political Econ.* **1990**, *98*, 225–264. [CrossRef]
7. Amihud, Y.; Lev, B. Risk reduction as a managerial motive for conglomerate mergers. *Bell J. Econ.* **1981**, *12*, 605–617. [CrossRef]
8. Morck, R.; Shleifer, A.; Vishny, R.W. Do managerial objectives drive bad acquisitions? *J. Financ.* **1990**, *45*, 31–48. [CrossRef]
9. Martin, J.D.; Sayrak, A. Corporate diversification and shareholder value: a survey of recent literature. *J. Corp. Financ.* **2003**, *9*, 37–57. [CrossRef]
10. Lamont, O.A.; Polk, C. Does diversification destroy value? Evidence from industry shocks. *J. Financ. Econ.* **2002**, *63*, 51–77. [CrossRef]
11. Burch, T.R.; Nanda, V. Divisional diversity and the conglomerate discount: The evidence from spin-offs. *J. Financ. Econ.* **2003**, *70*, 69–98. [CrossRef]
12. Rajan, R.; Servaes, H.; Zingales, L. The cost of diversity: The diversification discount and inefficient investment. *J. Financ.* **2000**, *55*, 35–79. [CrossRef]
13. Shin, H.H.; Stulz, R.M. Are internal capital markets efficient? *Quart. J. Econ.* **1998**, *113*, 531–552. [CrossRef]
14. Habib, M.A.; Johnsen, D.B.; Naik, N.Y. Spinoffs and Information. *J. Financ. Intermed.* **1997**, *6*, 153–176. [CrossRef]
15. Liu, Q.; Qi, R. Information Production, Analyst Following and Diversification Discount: A Market Microstructure Approach. Available online: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=279250 (accessed on 20 July 2016).
16. Curi, C.; Lozano-Vivas, A.; Zelenyuk, V. Foreign bank diversification and efficiency prior to and during the financial crisis: Does one business model fit all? *J. Bank. Financ.* **2015**, *61*, S22–S35. [CrossRef]
17. Gertner, R.H.; Scharfstein, D.S.; Stein, J.C. Internal versus external capital markets. *Quart. J. Econ.* **1994**, *109*, 1211–1230. [CrossRef]
18. Hubbard, R.G.; Palia, D. A reexamination of the conglomerate merger wave in the 1960s: An internal capital markets view. *J. Financ.* **1999**, *54*, 1131–1152. [CrossRef]
19. Khanna, N.; Tice, S. The bright side of internal capital markets. *J. Financ.* **2001**, *56*, 1489–1528. [CrossRef]
20. Mansi, S.A.; Reeb, D.M. Corporate diversification: What gets discounted? *J. Financ.* **2002**, *57*, 2167–2184. [CrossRef]
21. Marshall, B.R.; Nguyen, N.H.; Visaltanachoti, N. Frontier market transaction costs and diversification. *J. Financ. Mark.* **2015**, *24*, 1–24. [CrossRef]
22. Hadlock, C.J.; Ryngaert, M.D.; Thomas, S. Corporate structure and equity offerings: Are there benefits to diversification? *J. Bus.* **2001**, *74*, 613–635. [CrossRef]
23. Maksimovic, V.; Phillips, G. Do conglomerate firms allocate resources inefficiently across industries? Theory and Evidence. *J. Financ.* **2002**, *57*, 721–767. [CrossRef]
24. Graham, J.R.; Lemmon, M.L.; Wolf, J.G. Does corporate diversification destroy value? *J. Financ.* **2002**, *57*, 695–720. [CrossRef]
25. Campa, J.M.; Kedia, S. Explaining the diversification discount. *J. Financ.* **2002**, *57*, 1731–1762. [CrossRef]

26. Schoar, A. Effects of corporate diversification on productivity. *J. Financ.* **2002**, *57*, 2379–2403. [CrossRef]
27. Gomes, J.; Livdan, D. Optimal diversification: Reconciling theory and evidence. *J. Financ.* **2004**, *59*, 507–535. [CrossRef]
28. Santalo, J.; Becerra, M. Competition from specialized firms and the diversification–performance linkage. *J. Financ.* **2008**, *63*, 851–883. [CrossRef]
29. Low, D.C.M.; Roberts, H.; Whiting, R.H. Board gender diversity and firm performance: Empirical evidence from Hong Kong, South Korea, Malaysia and Singapore. *Pac. Basin Financ. J.* **2015**, *35*, 381–401. [CrossRef]
30. Gottesman, A.A.; Morey, M.R. Manager education and mutual fund performance. *J. Empir. Financ.* **2006**, *13*, 145–182. [CrossRef]
31. Li, W.; He, A.; Lan, H.; Yiu, D. Political connections and corporate diversification in emerging economies: Evidence from China. *Asia Pac. J. Manag.* **2012**, *29*, 799–818. [CrossRef]
32. Kor, Y.Y.; Leblebici, H. How do interdependencies among human-capital deployment, development, and diversification strategies affect firms' financial performance? *Strateg. Manag. J.* **2005**, *26*, 967–985. [CrossRef]
33. Van der Sluis, J.; Van Praag, M.; Vijverberg, W. Entrepreneurship selection and performance: A meta-analysis of the impact of education in developing economies. *World Bank Econ. Rev.* **2005**, *19*, 225–261. [CrossRef]
34. Wiersema, M.F.; Bantel, K.A. Top management team demography and corporate strategic change. *Acad. Manag. J.* **1992**, *35*, 91–121. [CrossRef]
35. Balcılar, M.; Demirer, R.; Hammoudeh, S. Global risk exposures and industry diversification with Shariah-compliant equity sectors. *Pac. Basin Financ. J.* **2015**, *35*, 499–520. [CrossRef]
36. Krapl, A.A. Corporate international diversification and risk. *Int. Rev. Financ. Anal.* **2015**, *37*, 1–13. [CrossRef]
37. Denis, D.J.; Denis, D.K.; Yost, K. Global diversification, industrial diversification, and firm value. *J. Financ.* **2002**, *57*, 1951–1979. [CrossRef]
38. Benito-Osorio, D.; Colino, A.; Guerras-Martínet, L.A.; Zúñiga-Vicente, J.Á. The international diversification-performance link in Spain: Does firm size really matter? *Int. Bus. Rev.* **2016**, *25*, 548–558. [CrossRef]
39. Switzer, L.N.; Tahaoglu, C. The benefits of international diversification: Market development, corporate governance, market cap, and structural change effects. *Int. Rev. Financ. Anal.* **2015**, *42*, 76–97. [CrossRef]
40. O'Brien, J.P.; David, P.; Yoshikawa, T.; Delios, A. How capital structure influences diversification performance: A transaction cost perspective. *Strateg. Manag. J.* **2014**, *35*, 1013–1031. [CrossRef]
41. Hoechle, D.; Schmid, M.; Walteret, I.; Yermack, D. How much of the diversification discount can be explained by poor corporate governance? *J. Financ. Econ.* **2012**, *103*, 41–60. [CrossRef]
42. Lampel, J.; Giachetti, C. International diversification of manufacturing operations: Performance implications and moderating forces. *J. Oper. Manag.* **2013**, *31*, 213–227. [CrossRef]
43. George, R.; Kabir, R. Heterogeneity in business groups and the corporate diversification–firm performance relationship. *J. Bus. Res.* **2012**, *65*, 412–420. [CrossRef]
44. Lewellen, W.G. A pure financial rationale for the conglomerate merger. *J. Financ.* **1971**, *26*, 521–537. [CrossRef]
45. Teece, D.J. Towards an economic theory of the multiproduct firm. *J. Econ. Behav. Organ.* **1982**, *3*, 39–63. [CrossRef]
46. Stein, J.C. Internal capital markets and the competition for corporate resources. *J. Financ.* **1997**, *52*, 111–133. [CrossRef]
47. Ramanujam, V.; Varadarajan, P. Research on corporate diversification: A synthesis. *Strateg. Manag. J.* **1989**, *10*, 523–551. [CrossRef]
48. Teece, D.J. Economies of scope and the scope of the enterprise. *J. Econ. Behav. Organ.* **1980**, *1*, 223–247. [CrossRef]
49. Cai, W.; Xu, F.; Zeng, C. Geographical diversification and bank performance: Evidence from China. *Econ. Lett.* **2016**, *147*, 96–98. [CrossRef]
50. Li, M.; Wong, Y.Y. Diversification and economic performance: An empirical assessment of Chinese firms. *Asia Pac. J. Manag.* **2003**, *20*, 243–265. [CrossRef]
51. Berger, A.N.; Hasan, I.; Zhou, M. The effects of focus versus diversification on bank performance: Evidence from Chinese banks. *J. Bank. Financ.* **2010**, *34*, 1417–1435. [CrossRef]
52. Lin, C.; Su, D. Industrial diversification, partial privatization and firm valuation: Evidence from publicly listed firms in China. *J. Corp. Financ.* **2008**, *14*, 405–417. [CrossRef]

53. Delios, A.; Wu, Z.J. Legal person ownership, diversification strategy and firm profitability in China. *J. Manag. Gov.* **2005**, *9*, 151–169. [CrossRef]
54. Delios, A.; Zhou, N.; Xu, W.W. Ownership structure and the diversification and performance of publicly-listed companies in China. *Bus. Horiz.* **2008**, *51*, 473–483. [CrossRef]
55. Villalonga, B. Diversification discount or premium? New evidence from the business information tracking series. *J. Financ.* **2004**, *59*, 479–506. [CrossRef]
56. Gomez-Mejia, L.R.; Tosi, H.; Hinkin, T. Managerial control, performance, and executive compensation. *Acad. Manag. J.* **1987**, *30*, 51–70. [CrossRef]
57. Lei, G.; Zhang, Y.; Jiang, P. Company fundamentals, investor perception, and stock return. *J. Account. Econ.* **2013**, *06*, 8–16. (In Chinese)