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Corporate-level strategy and firm performance: evidence from China

Evidence from
China

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Abstract

Purpose – The research interest in this paper is primarily in the question of how important changes in corporate-level strategy affect firm performance. This paper aims to explore the relationship between strategic change and performance, illustrate the frequency patterns of major strategic changes and assess the multi-period performance implications of major strategic changes.

Design/methodology/approach – This paper defines strategic change by combining contingency theory and resource-based view. The panel data from 1973 listed firms of China's A-share market that reported data between the years 2004 and 2015 are selected as the sample to test various relationships and effects between performance and strategic change.

Findings – This paper empirically shows that change in strategies benefits subsequent firm performance, specifically resources re-allocation among existing businesses will result better performance, and successful firms exhibit less strategic change than those performing poorly. It also demonstrates that, in China, the effects of a major strategic change on subsequent performance peaks after one year, but starts to decline thereafter.

Originality/value – This paper explores whether changes, especially important changes, in corporate-level strategy influence subsequent firm performance, and illustrates how frequently a listed firm in China makes decisions about corporate-level strategy. It contributes empirically to the literature by providing one of the first empirical evidence on assessing the effects of important changes in corporate-level strategy on performance.

Keywords Performance, Resource allocation, Strategic change, Corporate-level strategy, China's A share firms

Paper type Research paper

1. Introduction

Strategy is generally defined as the overall scope and direction of a firm and the way in which its various business operations and processes collaborate to achieve goals on behalf of shareholders, based on consideration of an assessment of the environment. After pioneer works on the definition of strategy (Chandler, 1962; Ansoff, 1965; Andrews, 1971), works, on the one hand, such as Miles and Snow (1978) and Porter (1980) resulted our consideration over the question of how to compete within a business; and, on the other hand, Beard and Dess (1981) distinguish corporate-level strategy from business-level strategy that the former concerned with questions about what businesses to compete in. The corporate strategy literature is undoubtedly very rich, and diversification is one of many topics in this extensive literature. Hofer and Schendel (1978) propound this view: "corporate-level strategy is concerned primarily with answering the question of what set of businesses should we be in. Consequently, scope and resource deployments among businesses are the primary components of corporate strategy." Diversification is one of good examples of corporate-



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level strategy. Firms often choose to diversify via mergers and acquisitions (M&As) because acquiring and integrating an ongoing entity is perceived to be a faster and less risky means of entering new markets, gaining new knowledge and capabilities, or adding to the firm's existing businesses (Chatterjee and Singh, 1999; Carow, Heron and Saxton, 2004). However, the most of existing literature put attention on diversification or focus (Markides and Williamson, 2010; Robins and Wiersema, 1995; Silverman, 1999; Miller, 2004), there are rarely works that consider other variables at the same time. It is true that corporate-level decisions are based on a complex evaluation of information at a point of time and that these decisions affect many variables such as distribution of firms assets among existing businesses (Barron *et al.*, 2011; Mantere *et al.*, 2012).

As corporate-level strategic decision-making is at the heart of the organization-environment co-alignment process (Bourgeois, 1980), congruence between corporate-level strategy and the rapidly changing environment is recognized as a vital factor of organizational survival (Zajac and Shortell, 1989; Nickerson and Silverman, 2003; Wu, 2013; Mackay and Chia, 2013). In the past decades, China has become the world's second largest economy, with Japan surrendering its 42-year-old ranking, and has its own features of M&A activities in the long course of economic development. The recent merger wave emerged in 2002, when China Securities Regulatory Commission enacted "Administrative Rules on Acquisition of Listed Company", and peaked in 2015. During this period, the Chinese Government has frequently adjusted monetary policy to cope with the macroeconomic challenges, known as economic decline, real estate bubble and high inflation. In the early stage, firms implemented an aggressive strategy because of the loose monetary and fiscal policy. Yet, in the later stage, firms faced challenges to survive from the unexpected contracted money supply policy. These facts that reflecting the rapid evolution of the booming economy, accompanied by the rapid change of industrial structure. Firms are therefore must adjust their strategies rapidly (Nickerson and Silverman, 2003; Levinthal and Wu, 2010; Wu, 2013; Yan *et al.*, 2015).

The research interest in this paper is primarily in the question of how important changes in corporate-level strategy affect firm performance. Though a large body of existing literature has explored strategic change from a variety of perspective, the ultimate goal is to identify its performance implications. Consequentially, questions like "how does strategic change influence performance" has always been an enduring topic of interest. However, empirical results are mixed.

Compared to existing literature, the present study further explores the following two aspects. First, it explores whether changes, especially important changes, in corporate-level strategy influences subsequent firm performance, and illustrates how frequently a listed firm in China makes corporate-level decisions. Second, using panel data from 1973 listed firms, represented 40 industry classes from 14 industry categories, of China's A-share market that reported data between the years 2004 and 2015, it contribute empirically to the literature by providing one of the first empirical evidence on assessing the effects of important changes in corporate-level strategy on performance.

2. Literature review

2.1 Defining strategic change

In practice, most listed firms have complex corporate-level strategy. In rapidly changing environment, top managers must contend with the varied and conflicting demands of resources among their sub-units in different industries. In some cases, resources usually shift from less profitable businesses to the more profitable businesses or from a dying industry to a promising industry (Beard and Dess, 1981) and, in turn, changes the share of

each business. While in some cases, top managers decided to enter or exit a business (Gort, 1962; Hopkin, 1982; Iacobucci and Rosa, 2005; Santalo and Becerra, 2010). Jacquemin and Berry's (1979) entropy measure captures both aspects of corporate-level strategy discussed above. In our paper, they are differentiated by the change in number of businesses on an annual basis.

No change in the number of businesses usually means that resources are shifting among existing industrially specialized sub-units. The effects of these processes have been becoming the main object of some researches (Bigley and Wiersema, 2002; Brockmann *et al.*, 2006). It is true that many firms, in their lifetime, implement important strategic changes without changing their business portfolio. In addition, correspondingly, over two-thirds of sample observations (firm-year) showing no-change in number of businesses in two consecutive years in our sample. Each of these observations shows us a possibility that the firm is undergoing corporate-level re-allocation of resources among the range of existing businesses in that year.

Assuming that performance, P , strategic variable, S , and environment, E , has following relationship:

$$P = f(S, E). \quad (1)$$

In addition, strategic variable at one point of time is formed as a certain combination of resources, $S = [R_1, R_2, R_3, \dots, R_m]$ (Mintzberg, 1978). Sometimes, it is infeasible to determinate the combination of resources for one business, thus, with the relationship in equation (1), the performance for each business become a feasible measure for understanding a firm's strategy. To be more specific, consider a firm active in m classes of industry. Those m classes in turn aggregate to s industry categories ($m \geq s$). Jacquemin and Berry (1979)'s entropy measure can be rewritten as a weighted average of the firm's diversification within industry categories plus the firm's diversification across those categories:

$$E_{Total} = \sum_{s=1}^s p_s \left(\sum_{i \in s} \frac{p_i}{p_s} \ln \frac{p_s}{p_i} \right) + \left(\sum_{s=1}^s p_s \ln \frac{1}{p_s} \right) \quad (2)$$

The first term is a weighted average of the firm's business portfolio across industry classes within each industry category with each class weighted by its relative importance p_s , and $p_s = \sum_{i \in s} p_i$ where p_i is the share of the i th business. The second term

is the business portfolio of the firm across industry categories. It is very intuitive that, on the one hand, a firm adopting a new diversification or refocusing process causes m or s to change, and hence affect E_{Total} . On the other hand, as discussed above, p_i could change dramatically because of corporate-level re-allocation of resources while both m and s remains the same. Thus, change in corporate-level strategy is operationalized as change in E_{Total} (Wiersema and Bantel, 1992; Boeker, 1997; Bigley and Wiersema, 2002; Brockmann *et al.*, 2006).

2.2 Relationship between strategic change and performance

From the perspective that the strategic change is the process of matching a firm's internal resources with environment, many study showed that strategic change

benefits performance (Finkelstein and Hambrick, 1990; Zajac and Kraatz, 1993; Zajac *et al.*, 2000). We should expect that there is a positive relationship between strategic change and performance which has documented in studies using similar measurement:

H1. Strategic change has positive performance implications

On the contrary, ecological theory suggests that strong inertial pressures limit strategic change. As a result, change is much less frequent than environmental change, and, when such change occurs, it reorganizes organizational competencies and resources advantages, causing the firm less reliable (Amburgey *et al.*, 1993). Therefore, undertaking change diverts resources from operations to reorganization, and thereby hurting efficiency and performance (Haveman, 1992). Instant of concluding all strategic changes will hurt performance, we believe that some strategic change, such as diversification, are quit costly:

H2. Resources re-allocation among existing businesses out performs diversification or refocusing

Rather than concluding that there is a simple or linear relationship between strategic change and performance, some studies document no relationship (Kelly and Amburgey, 1991), mixed relationship (Smith and Grimm, 2010) or non-linear relationship (Zhang and Rajagopalan, 2010) between strategic change and performance.

If strategic change is critical to firms' performance, then one should be curious about the determinants of such a strategic change. Information of poor performance signal management that the current organizational strategy may not fit the changing environment or resource allocation, making strategic change more likely (Crossland *et al.*, 2014; Kacperczyk *et al.*, 2014):

H3. Firms performing well will exhibit less strategic change than those performing poorly.

3. Methodology

3.1 Data

Financial statements available on CSMAR and Wind Economic database are the major sources of data for our paper. In particular, this paper included in the study 1973 listed firms of China's A-share market that reported data between the years 2004 and 2015. These firms represent 40 classes of industry from 14 industrial categories in the guidelines for the industry classification of listed companies issued by the China Securities Regulatory Commission, ensuring our results generalize across industries. Our sample excluded firms in the financial industry, indicated by the letter "J" in China Securities Regulatory Commission industry classification. Each industrial class should have at least three firms between the years 2004 and 2015, and each firm should report data for at least three consecutive years.

3.2 Measures

3.2.1 Performance and strategic change. The measure of firm performance is return on assets (ROA), as ROA is a standard measure of operating performance in organizational research.

In [Jacquemin and Berry \(1979\)](#), the entropy measure is defined as:

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$$E = \sum_{j=1}^n p_j \ln^{1/p_j} \quad (3)$$

where p_i is the proportion of business j 's sales in total sales and n is the number of total businesses the firm enters. The strategic change is measured as the change in entropy measure. The strategic change variable in [equation \(2\)](#) is obtained as:

$$SC_{i,t}^{(1)} = E_{i,t} - E_{i,t-1} \quad (4)$$

This direct change helps us to capture direction, magnitude, and timing information of change. The strategic change variable in [equations \(4\) and \(5\)](#) is obtained as:

$$SC_{i,t}^{(2)} = abs(E_{i,t} - E_{i,t-1}). \quad (5)$$

As an independent variable, it represents the likelihood of strategic change. To be specific, an absolute change in entropy measure near zero suggests that the firm faces no need to change and will be less likely to change, and a large absolute change in entropy measure suggests that the firm faces the necessity to change and will be more likely to change. Information of Firms' sales composition are disclosure in notes to the annual financial statements.

3.2.2 Controls. This paper includes five strategic indicators described in [Finkelstein and Hambrick \(1990\)](#) as the control variables. More specifically:

- (1) *advertising intensity* is measured as selling expenses_{*t*}/sales_{*t*};
- (2) *nonproduction overhead* is measured as GA expenses_{*t*}/sales_{*t*};
- (3) *inventory levels* is measured as inventories_{*t*}/sales_{*t*};
- (4) *fixed assets newness* is measured as net fixed asset_{*t*}/gross fixed asset_{*t*}; and
- (5) *financial leverage* is measured as debt_{*t*}/equity_{*t*}. *prior strategic change* is also added as the control variable to the contingencies model.

As the sample includes firms from 40 industrial classes, standardizing all variables by industry at class level and year can control for the industrial effects ([Wowak et al., 2016](#)). At last, *size_{*t*}*, the natural logarithm of total asset, and year dummy variable is also included as control variables. Descriptive statistics and correlations are reported in [Table I](#).

3.3 Models

We use the time series regression method to assess the hypothesized relationships between strategic change and performance variables. Specifically, we use a dynamic panel generalized method of moments (GMM) specification to examine how changes and performance can affect each other, and, in turn, to examines performance implications of past major strategic changes. GMM is appropriate because unbalanced cross-sectional time series data of the type in our sample violate basic assumptions required for ordinary least-squares regression ([Wintoki et al., 2012](#)).

We use [equations \(6\)-\(8\)](#) to investigate the relationship between strategic change and performance (*H1-H3* respectively):

Table I.
Descriptive statistics
and correlations for
Granger–Causality
testing models

	Mean	SD	1	2	3	4	6	7	8	9	10
1. ROA ($t + 1$)	0.037	0.140									
2. Strategic change ($t + 1$)	0.008	0.214									
3. ROA (t)	0.039	0.139	0.086*								
4. Strategic change (t)	0.006	0.215	−0.013	0.011							
5. Advertising intensity (t)	0.072	0.316	0.013	−0.156*	0.010						
6. Nonproduction overhead (t)	0.293	19.199	0.002	0.036*	−0.063*	−0.001					
7. Inventory levels (t)	0.764	30.123	−0.002	0.007	−0.007	0.001	0.265*				
8. fixed assets newness (t)	0.650	0.141	−0.010	0.007	0.028*	0.026*	0.758*	−0.080*			
9. Financial leverage (t)	0.572	8.453	0.020	−0.009	−0.042*	−0.004	0.015	0.005	0.005		
10. Size (t)	21.527	1.230	−0.010	0.013	0.038*	0.014	−0.067*	0.009	−0.001	−0.002	
								−0.036*	−0.017	0.043*	−0.093*

Note: *¹ Indicates that coefficients are significant at 0.01

$$P_{i,t+1} = \gamma_i P_{i,t} + \beta_i SC_{i,t} + C_{i,t} + \epsilon_{i,t+1} \quad (6) \quad \text{Evidence from China}$$

$$SC_{i,t+1} = \gamma_i SC_{i,t} + \beta_i P_{i,t} + C_{i,t} + \epsilon_{i,t+1} \quad (7)$$

$$P_{i,t+1} = \gamma_i P_{i,t} + \beta_i SC_{i,t} + \lambda D_1 SC_{i,t} + C_{i,t} + \epsilon_{i,t+1} \quad (8)$$

where P_i is firm i 's performance, SC_i is strategic change variable, and C_i are the control terms. D_1 is to capture the existence of change in number of businesses.

4. Empirical findings

The Models 1 and 3 in Table II support our discussion regarding the overall relationship of strategic change and performance. Both lagged strategic change and performance variables are statistically significant in both models. To be specific, the positive and significant coefficient of strategic change variable from $t - 1$ to t of Model 1 predicts that change in strategies benefits subsequent firm performance (support $H1$). In addition, the negative and significant coefficient of ROA at t of Model 3 predicts that successful firms exhibit less strategic change than those performing poorly (support $H3$).

After identifying that there are, in general, significant relationships between our strategic change and performance variables, this paper interested in performance implications of important corporate-level strategic changes. However, identifying such changes can be an empirical challenge associated with assessing the effects of important corporate-level strategic changes on performance.

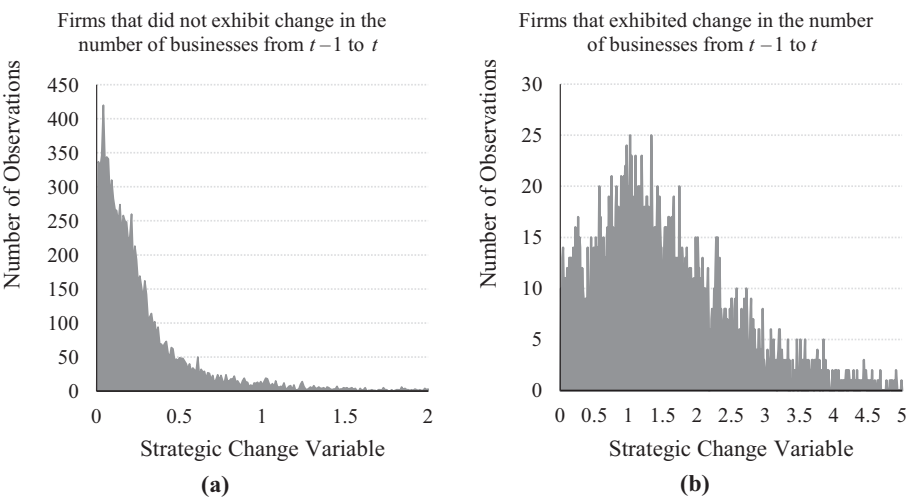
Exploiting the average change in strategic change variable can help addressing this challenge. For all 14,103 observations in the sample, 3,511 observations changed number of businesses $t - 1$ to t , and 10,592 observations had no change in number of businesses $t - 1$ to t . An overview of the strategic change variable for the sample is illustrated in Figure 1.

Recall that strategic change is the absolute value of change in entropy measure. Figure 1 (a) illustrates strategic change for firms that did not exhibit a change in the number of businesses from $t - 1$ to t , the average change in strategic change variable is 0.279. In the rest of discussion, the number 0.279 is treated as the threshold for important corporate-level strategic changes. In other words, an absolute value of change in entropy measure greater than 0.279 is considered as an important change corporate-level strategy. In Figure 1(a), many of the observations record large changes. Those large values could have resulted from re-distribution

Table II.
GMM estimates:
relationship of
changes in strategies
and performance

	Model 1	ROA ($t + 1$) Model 2	Strategic change ($t + 1$) Model 3
ROA (t)	0.0489*** (0.0022)	0.0482*** (0.0022)	-0.3023*** (0.0056)
Strategic change (t)	0.4930*** (0.0087)	0.5176*** (0.0085)	0.0136*** (0.0007)
Strategic change * <i>Dummy</i>		-0.3636*** (0.0126)	
Advertising intensity (t)	0.3878*** (0.0210)	0.2935*** (0.0207)	0.2426*** (0.0117)
Nonproduction overhead (t)	-0.1332*** (0.0084)	-0.1471*** (0.0085)	0.3207*** (0.0071)
Inventory levels (t)	-0.3422*** (0.0076)	-0.3131*** (0.0076)	0.2913*** (0.0064)
Fixed assets newness (t)	0.6372*** (0.0122)	0.6000*** (0.0124)	0.6346*** (0.0110)
Financial leverage (t)	0.0726*** (0.0057)	0.1028*** (0.0056)	-0.6045*** (0.0101)
Size (t)	-1.1058*** (0.0155)	-0.9886*** (0.0164)	0.2097*** (0.0163)
Number of firms	1973	1973	1973
Chi squared	28728.3	29231.2	27128.4

Figure 1.
An overview of
strategic change
variable for the
sample



of firm assets, sales, employment, capital-budget, or other resources among the range of existing businesses. It also matches our discussing in the beginning of the paper. Figure 1 (b) illustrates strategic change for firms that exhibited a change in the number of businesses from $t-1$ to t . In addition, in Figure 1 (b), some of the observations record very small magnitude of change, those small values could be resulted from divestitures of businesses with very small sales.

As per our earlier discussion, two aspects of strategic change are differentiated by change in number of businesses on an annual basis. Thus, it is clearly important to know which type of strategy will result better performance in our sample before any further discussion. In Model 2 of Table II, a dummy variable was created to capture the existence of change in number of businesses: *Dummy* is coded as one when number of businesses changed. Results show both types of strategy benefit performances; the coefficient for the interaction term is negative and significant, indicating that there is a significant difference between the two strategies. Resources re-allocation among existing businesses will result better performance than diversification or refocusing in our sample (support H2).

Table III illustrates that, on average, how frequently firms in our sample make major strategic changes. The sample size decreases as the years of continuous data increase. Our largest sample consists of 1552 firms which make major strategic changes every 2.34 years on average, and, among them, 288 firms does not change at all. Our smallest sample consists of 374 firms which make major strategic changes every 2 years on average, and among them, 5 firms did not change strategic over 12 years. It is obvious that firms in China make major strategic change every 2 to 2.43 years.

Model 4 in Table IV examines the relationship of past strategic changes and performance. Three dummy variables was created to capture the existence of major strategic changes. D_1 is coded as 1 when $strategic\ change_t$ is smaller than 0.279, which is the average magnitude of change of firms that did not exhibit a change in the number of businesses in a period. Similarly, D_2 is coded as 1 when $strategic\ change_{t-1}$ is smaller than 0.279, and D_3 is coded as 1 when $strategic\ change_{t-2}$ is smaller than 0.279.

Model 4 is a four-period model which tests the effects of major strategic changes at $t-2$ on performance at $t+1$. When $D_3 = 0$ and $D_2 = D_1 = 1$, major strategic changes at $t-2$ has

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Years of continuous data	No. of firms	Frequency of a major strategic change (years)	No. of firms with no major strategic change	Proportion (%)
3	1552	2.34	288	18.6
4	1332	2.41	196	14.7
5	1057	2.43	99	9.4
6	979	2.41	71	7.3
7	886	2.33	44	5.0
8	791	2.23	23	2.9
9	714	2.22	19	2.7
10	669	2.22	17	2.5
11	550	2.16	12	2.2
12	374	2.00	5	1.3

Table III.

Frequency of a major strategic change

Notes: Our sample consists of data from year 2004 to 2015, the maximum range of continuous data is 12 years

	ROA ($t + 1$) Model 4
ROA (t)	0.0311*** (0.0032)
Strategic change (t)	-0.4712*** (0.0283)
Strategic change ($t - 1$)	-0.6617*** (0.0172)
Strategic change ($t - 2$)	-0.9072*** (0.0228)
Strategic change (t) $\times D_1$	2.1360*** (0.2242)
Strategic change ($t - 1$) $\times D_2$	3.1513*** (0.2565)
Strategic change ($t - 2$) $\times D_3$	-7.6562*** (0.1788)
Advertising intensity (t)	-0.6818*** (0.0382)
Nonproduction overhead (t)	-0.4058*** (0.0148)
Inventory levels (t)	0.0592*** (0.0147)
Fixed assets newness (t)	-0.0827*** (0.0170)
Financial leverage (t)	0.3792*** (0.0132)
Size (t)	0.0875* (0.0404)
Number of firms	1100
Chi squared	7720.2

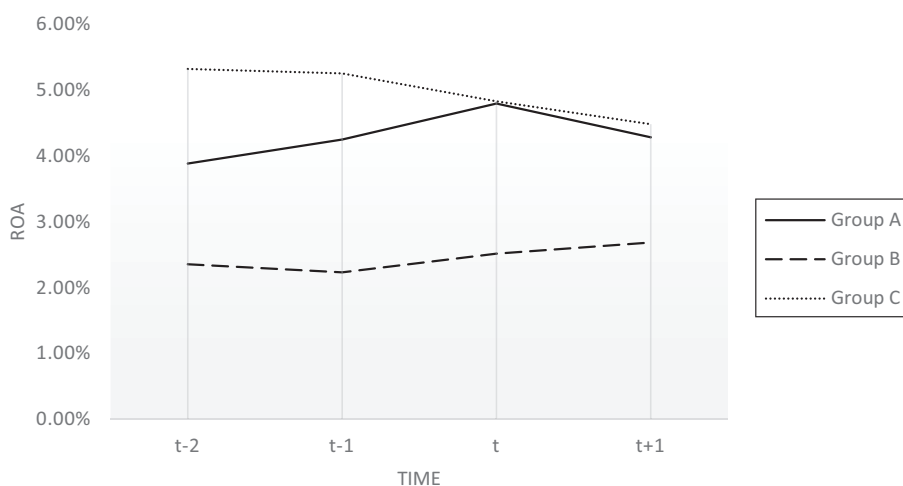
Table IV.GMM estimates:
relationship of past
changes in firms'
strategies and
performance

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed test); the model also includes year dummy variables; D_1 is coded as 1 when Strategic change $_t$ is smaller than 0.279, which is the average value of entropy measure of firms that did not exhibit change in the number of businesses in a year. Similarly, D_2 is coded as 1 when Strategic change $_{t-1}$ is smaller than 0.279, and D_3 is coded as 1 when Strategic change $_{t-2}$ is smaller than 0.279

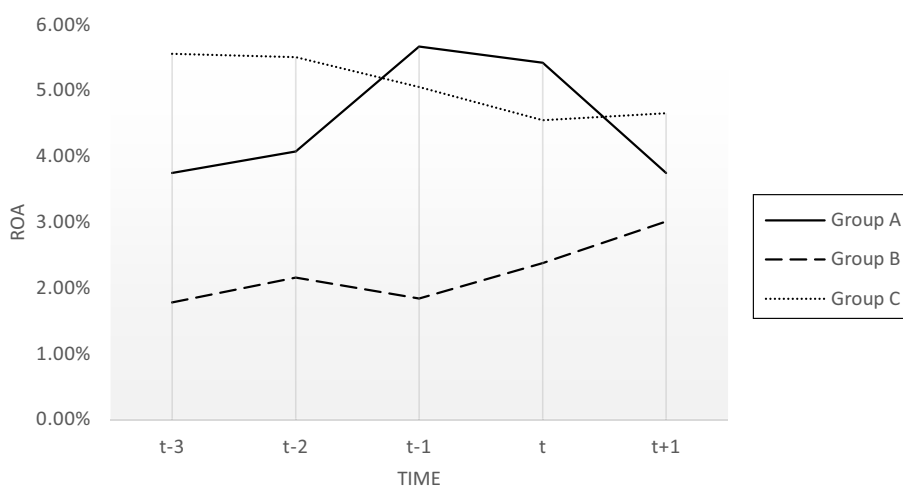
negative effects on performance at $t + 1$. The two periods with small changes in strategies following a major change in strategies at $t - 2$ shows positive effects on performance at $t + 1$, and the coefficients of the strategic variable at t and $t - 1$ are 1.665 and 2.490 respectively. In other words, the lag effect of a major change in strategies at $t - 2$ on subsequent ROA peaks at $t - 1$. To support this finding, the average performance for firms with different strategic patterns are illustrated in Figures 2 and 3.

In Figures 2 and 3, firms exhibit small changes following a major strategic change are classified into the Group A. As the comparison, firms exhibit major strategic changes every

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**Figure 2.**

A four-year overview of performance for firms with different strategies

**Figure 3.**

A five-year overview of performance for firms with different strategies

year and no major strategic change at all are classified into the Group B and C, respectively. It is very intuitive that firms in Group A shows the greatest improvement in performance during the second year after the major strategic change. However, their performance start to decline during the third year and drop quite fast in the fourth year. For firms in Group B, frequent strategic changes appear to have limited effect in improving performance. For firms in Group C, their performance are declining.

5. Discussion

The research interest in this paper is primarily in the question of how important changes in corporate-level strategy affect firm performance. New evidence emerges from the results by studying listed firms in China.

The findings suggest the following. First, this study testify that change in strategies benefits subsequent firm performance (Zhang, 2006; Zhang and Rajagopalan, 2010), and successful firms exhibit less strategic change than those performing poorly (Crossland *et al.*, 2014; Kacperczyk *et al.*, 2014). After identifying that the significant relationships between strategic change and performance, it also digs deep to discover further details about the performance implications of past strategic changes. By creating a dummy that distinguish two types of corporate-level strategies, resources re-allocation versus diversification or refocusing, the results suggest that resources re-allocation among existing businesses will result better performance than diversification or refocusing in our sample.

Second, using the sample average magnitude of change of firms that did not exhibit a change in the number of businesses from $t - 1$ to t as a benchmark to determine whether a firm exhibits a major strategic change or not, the results suggest that firms in China make major strategic change every 2 to 2.43 years. Facing rapid environmental changes, firms experience quick adjustment for sustain competitive advantages (Eisenhardt, 1989), and, therefore, leads to better performance (Judge and Miller, 1991; Baum and Wally, 2003).

Third, by creating three dummy variables for different lag periods, the results suggest that, in China, the lag effect of a major strategic change at $t - 2$ on subsequent ROA peaks at $t - 1$ but start to decline thereafter. Figures 2 and 3 provides a straightforward view. In addition, firms exhibited major strategic changes every year have very low ROA; on the contrary, firms do not change strategy at all typically have high ROA. This finding also suggests that firms performing poorly will exhibit greater strategic change than those performing well. It is important to note that, in our sample period from year 2004 to 2015, China has emerged as one of the most rapidly developing economies in the world. Therefore, our evidence indicates that firms in China must change frequently for better performance is reasonable. This pattern should also suitable for all firms from emerging economies. Contrarily, firms from well developed economies, such as the USA and European, generally face less turbulent environment and should demand less changes in strategy.

It is important to note the study's limitations. First, the study relied on information contained in the financial statements. Although standard measures of strategic change were used, further research can be made using primary data. Second, while the study considered single measure for strategic change, there are certainly other feasible substitutive measures that are also widely used; we also considered single measure for firm's performance, to examine relationship between strategic changes and other non-financial performance indicators could be also meaningful when studying a specific industry. Third, while our environmental and organization factors are selected across industry, industry-specific factors should provide more detailed understanding under difference industrial context. Forth, the study is based on a sample of listed firms in China, this restriction limits generalizability of the findings.

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