

Yang, Chiau-Shi; Shyu, Jonchi

## Article

# Do institutional investor and group, firm and time effects matter in enterprise performance in the corporate life cycle?

Cogent Business & Management

## Provided in Cooperation with:

Taylor & Francis Group

*Suggested Citation:* Yang, Chiau-Shi; Shyu, Jonchi (2019) : Do institutional investor and group, firm and time effects matter in enterprise performance in the corporate life cycle?, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 6, pp. 1-18, <https://doi.org/10.1080/23311975.2019.1606473>

This Version is available at:

<https://hdl.handle.net/10419/206176>

### Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

### Terms of use:

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/4.0/>



## MANAGEMENT | RESEARCH ARTICLE

# Do institutional investor and group, firm and time effects matter in enterprise performance in the corporate life cycle?

Chiau-Shi Yang and Jonchi Shyu

---

*Cogent Business & Management* (2019), 6: 1606473



Received: 25 October 2018  
Accepted: 08 April 2019  
First Published: 11 April 2019

\*Corresponding author: Chiau-Shi Yang,  
Taiwan  
E-mail: [d10108205@mail.ntust.edu.tw](mailto:d10108205@mail.ntust.edu.tw)

Reviewing editor:  
Milena Ratajczak-Mrozek,  
Department of International  
Marketing, Poznań University of  
Economics and Business, Poland

Additional information is available at  
the end of the article

## MANAGEMENT | RESEARCH ARTICLE

# Do institutional investor and group, firm and time effects matter in enterprise performance in the corporate life cycle?

Chiau-Shi Yang<sup>1\*</sup> and Jonchi Shyu<sup>1</sup>

**Abstract:** Corporations undergo growth, maturity and decline, stages which form the corporate life cycle. This study discusses the influence of group, firm and time effects on enterprise performance variation at the different life cycle stages of Taiwan's electrical and machinery industry. Results indicate that firm effect has a stronger influence than group effect, and group effect has the strongest influence at the mature stage. Thus, group effect is greatly reduced, whereas firm effect should be reduced but increased at the decline stage, a finding that is different from general perceptions. Institutional investors are important for corporations, and the response strategies of firms for institutional investors vary at different stages of the corporate life cycle. Therefore, this study also discusses the influences of institutional investors on enterprise performance variation at the firm level. Results suggest that firms implement suitable response strategies for institutional investors. Moreover, domestic general enterprise investors have positive and large impacts on enterprise performance, whereas financial institutional investors have a negative impact during the decline stage.

### ABOUT THE AUTHORS

Jonchi Shyu is a professor of department of business administration in the National Taiwan University of Science and Technology, and his research agenda explores issues of corporate performance variation, corporate life cycle, institutional investors, strategic management, financial management, investment and multinational enterprise.

Chiau-Shi Yang is a PhD student of department of business administration in the National Taiwan University of Science and Technology, and her research agenda explores issues of corporate performance variation, corporate life cycle, institutional investors, trade of vertical specialization and intra-industry trade.

### PUBLIC INTEREST STATEMENT

There are different levels within the enterprise, such as group, firm, and time level, and different organizational levels have different effects on the enterprise performance because of different strategic objectives; at the same time, the institutional investors in the firm level have also a greater influence on enterprise performance. However, the enterprises are with phenomena of growth, maturity and decline which form the corporate life cycle, that's meaning the group, firm, time and the institutional investors with different influences on the enterprise performance at the different life cycle stages. On the other hand, the machinery industry following by semiconductor and panel industries and became the third largest industry in Taiwan, and thus it's output value was as high as US\$35.8 billion in 2016; therefore, this study thinks that the factors' impact on the enterprise performance in Taiwan electrical and machinery industry must be in-depth discussion in order to help the strategic planning for the manufacturing enterprises.

**Subjects:** Asia Pacific Studies; Business, Management and Accounting; Industry & Industrial Studies

**Keywords:** Taiwan electrical and machinery industry; general enterprise investors; financial institutional investors; corporate life cycle; hierarchical linear model

**JEL classification:** G230; L100; L690; M190

## 1. Introduction

The return of the US manufacturing industry has wielded a negative impact on the global middle-goods trade for the manufacturing industry in Taiwan. However, the output value<sup>1</sup> of the machinery industry as the downstream of the electrical and machinery industry and owing to its large capacity was as high as US\$35.8 billion in 2016, and that followed by the semiconductor and panel industries as the third largest industry in Taiwan. In terms of the annual growth rates of output values,<sup>2</sup> the rate in the machinery industry has improved since 2013, surpassing that of the semiconductor industry with a higher rate in 2017. Therefore, the value of Taiwanese electrical and machinery industry is more and more important in recent years, and the factors that impact the performance through an in-depth discussion.

An advantage of having hierarchies is that each level tends to have a particular focus (Deville, Ferrier, & Leleu, 2014). Moreover, due to the cross-disciplinary characteristic<sup>3</sup> of enterprises in Taiwanese electrical and machinery industry, firms tend to carry out strategic alliances or form groups through mergers and acquisitions, thereby providing different resources for enterprises. On the other hand, according to contingency theory (Lawrence & Lorsch, 1968; Pennings, 1992), the organizational performance results from the alignment between firms, resources and the environment. So the problems which enterprises of Taiwanese electrical and machinery industry with long-term development face and their response strategies should be different because of their different resources and environments at corporate life cycle stages. As a result, the influence of enterprises in Taiwanese electrical and machinery industry on the enterprise performance variation not only be different due to organizational levels but also the corporate life cycle stages. But the researches of enterprise performance variation more explore the influences of the factors in different organizational levels, and rarely cite the influences between different organizational hierarchies and the corporate life cycle stages; at the same time, there is also with a research gap exists because the influences of different levels of internal company on enterprise performance variation have seldom been discussed since 2006. Therefore, this study based on the development and industrial characteristics of the above-mentioned in Taiwanese electrical and machinery industry for the research gaps to explore.

This study also considers institutional investors at the firm level because of the performance reflected from the alliances, mergers and acquisitions of subsidiaries. Institutional investors' shareholding rates have a positive impact on enterprise performance (McConnell & Servaes, 1990). Firms will also adopt different strategies for stakeholders<sup>4</sup> based on their performance loss or gain (Jawahar & McLaughlin, 2001; Kahneman & Tversky, 1979) so that firms and institutional investors will interact with one another. In terms of the Taiwanese electrical and machinery industry, besides the enterprises' products with basic mechanical mechanics and professional technologies, other engineering fields must also be involved, which is why firms must pay attention to cross-disciplinary or cross-business alliances, such as adding different types of institutional investors. Moreover, institutional investors have a greater influence on enterprise performance than investment retail investors, which may cause by institutional investors with a positive effect on the selection and supervision of investment targets (Oviatt, 1988). Therefore, institutional investors' shareholdings not only with positive but also important influences on the enterprise performance in Taiwanese electrical and machinery industry. On the other hand, the interaction strategies to institutional investors of companies vary at different stages of the corporate life cycle

(Jawahar & McLaughlin, 2001), so the impacts on the enterprise performance at the corporate life cycle stages in Taiwanese electrical and machinery industry are also explored separately; at the same time, given that the influence of institutional investors on enterprise performance variation at life cycle stages has seldom been discussed since 2010, and the current study also intends to fill this gap.

As above, the current study's research questions are as follows: (1) How do group, firm and time effects affect enterprise performance variation in the Taiwanese electrical and machinery industry at stages of the corporate life cycle? (2) How are the interaction strategies of Taiwanese electrical and machinery enterprises adopted by different institutional investors at stages of the corporate life cycle? This study expects to discuss the above research issues and supply the gaps of related topics in recent years. By a deeper understanding of the factors for the performance in Taiwanese electrical and machinery industry, thus providing the useful management suggestions for the enterprises.

## 2. Literature review

### 2.1. Corporate life cycle and the influences of group, firm and time effects

Non-family-owned firms create value by using their firm-specific managerial experience to manage the resources and capabilities obtained from networking relationships with community leaders (Acquaah, 2012). This approach suggests that firm-specific managerial experience at the firm level of the enterprise has a positive effect on the enterprise. From the perspective of the evolution of organizational ecology, an organization is similar to a living being that experiences the phenomena of growth, maturity and decline (Lester, Parnell, & Carraher, 2003). The interaction strategy of a company to environmental change also has a certain degree of importance on the impact of enterprise performance. A significant positive correlation exists between changes in corporate environmental challenges and changes in successful corporate strategy development (Gupta & Chin, 1993). Thus, it has a positive influence on enterprise performance in response to changes in the corporate environment with fine strategies.

However, changes in the corporate environment will also be affected by the corporate life cycle itself; that is, the environment with increasing dynamism and heterogeneity seems to require more innovation (Miller & Friesen, 1983). Likewise, organizations exhibit more innovation in the high growth stage of their organizational life cycle than in their mature stages (Gupta & Chin, 1993). Thus, growth is associated with a high variety in strategic approaches that appear to increase intra-enterprise performance heterogeneity and the importance of business-unit effects (Miles, Snow, & Sharfman, 1993). As a result, when a company is at the growth stage, it will face a high degree of environmental heterogeneity and high influences of the business unit in companies. Moreover, as the trend shifts to the later stages of the corporate life cycle, heterogeneity from the corporate environment will decrease and, consequently, innovation performance. At the same time, most changes in the corporate environment are based on the industry life cycle. Karniouchina, Carson, Short, and Ketchen (2013) show that the business-unit effects of the growth stage are highly important. If the characteristics of the industrial life cycle serve as reference to the corporate life cycle and the business-unit effect is regarded as the firm effect, then the study results of Karniouchina et al. (2013) indicate that firm effects decline as the corporate life cycle shifts into later stages. On the basis of the abovementioned context, this study proposes the following hypothesis:

Hypothesis 1-1: Firm effect on enterprise performance variation in the Taiwanese electrical and machinery industry decreases as the trend shifts to the later stages of the corporate life cycle.

In terms of group effect, centralization of equity ties enhances affiliate performance (Mahmood, Zhu, & Zaheer, 2017); that is, the same equity in a group may have a positive effect on the performance of associated enterprises. By contrast, as the variety of competitor offerings lessen, firms experience

shrinking margins and are forced to compete on price (Porter, 1980); at this time, the initiatives taken at the corporate parent level are crucial (Ganco & Agarwal, 2009). In this case, the decision made by the parent company becomes more important (Karniouchina et al., 2013) as the trend shifts to the later stages of the corporate life cycle because the heterogeneity of the corporate environment will decrease. With a low innovation kinetic energy, the resource allocation role of the corporate parent will relatively be more important for maintaining enterprise performance. Therefore, if the corporate parent's effects are regarded as group effects; then, the research results of Karniouchina et al. (2013) can also be regarded as increasing group effects as the corporate life cycle shifts into later stages. On the basis of the aforementioned context, this study proposes the following hypothesis:

Hypothesis 1-2: Group effect on enterprise performance variation in the Taiwanese electrical and machinery industry increases as the trend shifts to the later stages of the corporate life cycle.

Rumelt (1991) first included year effects into the research on corporate performance variation, which can be regarded as transient change, the remaining uninterpretable mutated part or an error term. Misangyi, Elms, Greckhamer and Lepine (2006) called this unexplained variation as time effect. However, Misangyi et al. (2006) argued that the year effects proposed by Rumelt (1991) should only be a strategy factor in the time level rather than the variance of the overall time level. They also considered that the time effect should include other long-term time factors rather than only year effects. Moreover, Short, Ketchen, Bennett, and Du Toit (2006) considered that long-term time factors may come from the impacts of internal enterprises, such as organizational slack, and the impacts of external environments, such as technological opportunity. Therefore, the present study refers to the definition of Misangyi et al. (2006) and considers time effect to have a cumulative effect over time. However, due to different aspects of time factors, it is difficult to clarify whether overall time effect increases or decreases as the trend shifts to the later stages of the corporate life cycle. Therefore, while we do not formulate the hypothesis, the analysis results will be explained in a later section.

## **2.2. Corporate life cycle and institutional investors**

The environments of enterprises have different impacts on their strategy formulation at different life cycle stages, with corporate governance playing an important role in the formulation. Jawahar and McLaughlin (2001) show that different strategies are used to deal with stakeholders over time. They use prospect theory (Kahneman & Tversky, 1979) to explain how and why an organization's management allocates different levels of attention to different stakeholders. Moreover, prospect theory shows that individuals are risk seeking in the loss domain but risk averse in the gain domain (Kahneman & Tversky, 1979). At the growth and mature stage, resource allocation decisions will be framed in the context of gains because enterprises are facing a high-speed growth environment, and the firms must use risk-averse strategies for a greater number of stakeholder issues, such as positive and adaptive strategies to improve strategy flexibility. However, at the decline stage, resource allocation decisions will be framed in the context of losses because enterprises are facing a low-speed growth environment, and the firms must use risk-seeking strategies for a lesser number of stakeholder issues, such as defensive or reactive strategies (Carroll, 1979; Filatotchev, Toms, & Wright, 2006; Jawahar & McLaughlin, 2001). The present study considers that institutional investors may also be regarded as stakeholders. Therefore, as enterprises have different interaction strategies to institutional investors at different life cycle stages (Jawahar & McLaughlin, 2001), the impacts on enterprise performance also vary. Institutional investors have a positive impact on enterprise performance as well (McConnell & Servaes, 1990), but the effect of owner type is significant and pervasive (Xia & Walker, 2015). Policymakers should also encourage widely dispersed state ownership in firms to help improve firm performance (Phung & Mishra, 2015) so that various institutional investors will have different influences on enterprise performance.

## **2.3. Foreign and domestic institutional investors**

Firm performance increases as foreign ownership increases (Phung & Mishra, 2015). Foreign financial institutions are particularly associated with improved performance (Filatotchev, Lien, & Piesse, 2005). If institutional investors use foreign capital, then companies with a high proportion

of foreign-invested investors will perform better compared with those that have a lower proportion of foreign-invested investors (Huang & Shiu, 2008). Promoting enterprises to attract foreign investment for higher profits may be easier during the growth stage than at other stages. At the growth stage, foreign investment has a supervisory role on investment targets (Oviatt, 1988), which can positively affect enterprise performance. However, as the trend shifts to later stages of the corporate life cycle, the lower the attraction to foreign capital is, the lower the proportion of foreign ownership will be due to the gradually decreasing enterprise performance and the less positive the impact that foreign investment will have on enterprise performance. Therefore, this study proposes the following hypothesis:

Hypothesis 2-1: The positive impact of foreign institutional investors on enterprise performance variation in the Taiwanese electrical and machinery industry decreases as the trend shifts to later stages of the corporate life cycle.

Enterprises will likewise engage in more retrenchment strategies to mitigate corporate losses during the decline stage, a concept which most turnaround practitioners promote (Bibeault, 1982; Davis, 1993). In the process of asset retrenchment, business units or projects with low-profit performance may likely be abolished. In the manufacturing industry, poor performance will induce the general enterprise investor and the invested enterprise to conduct more strategic alliances with domestic upstream and downstream firms to obtain additional benefits from raw materials used in the production activities. Thus, the whole group of industries becomes mutually supportive, which can effectively reduce costs and increase the bargaining power of the overall industry (Porter, 1990). By contrast, cooperating with firms from other industries within the cluster spurs upgrading by stimulating diversity in R&D approaches and facilitating the introduction of new strategies and skills (Porter, 1990). Therefore, given that domestic electrical and machinery enterprises are mostly in the manufacturing industry, the impact on enterprise performance of institutional investors, compared with foreign capital, increases in the later stages of the corporate life cycle because a domestic industrial cluster can reduce production costs and increase skill exchange between firms. This study proposes the following hypothesis:

Hypothesis 2-2: The positive impact of domestic institutional investors on enterprise performance variation in the Taiwanese electrical and machinery industry increases as the trend shifts to later stages of the corporate life cycle.

#### **2.4. General enterprise investors and financial institutional investors**

Institutional investors can be classified into foreign and domestic enterprises, which can be divided further into general enterprises and financial institution investors by their business attributes. In terms of general enterprise investors, from a resource-based perspective, governance choices may affect the creation of economic rents by providing access to valuable, rare, costly to imitate and non-substitutable resources, as well as mediating their appropriation (Coff, 1999). Moreover, the strategic dynamics and corporate governance changes of firms are interlinked (Filatotchev et al., 2006). A corporation with different general enterprise investors as the firm's strategy may bring different resources for enterprises at the corporate life cycle stages. Thus, these investors can help improve firm performance.

At the growth stage, firms face a relatively high-speed environment, so the resource and the knowledge resource role of governance may be particularly important for increasing strategic flexibility and ensuring a long-term focus on growth and survival (Filatotchev et al., 2006). Therefore, resource and strategy roles, such as corporations with different institutional investors as the firms' strategy for gaining additional knowledge and skills resources, are high at this stage. At the mature stage, due to the stock price and business scale growth, an enterprise begins to focus on the development of strategic opportunities, thereby increasing the diversity of institutional investors (Filatotchev et al., 2006; Miller & Friesen, 1984). However, when an enterprise is at the decline stage, it faces a relatively low-speed environment and the problem of increasing the diversity among institutional investors through over-diversification during the mature stage. Thus,

the corporate boards and external shareholders in declining firms should be particularly vigilant in monitoring managerial decisions (Filatotchev et al., 2006). They also tend to implement organizational or financial retrenchment to reduce the loss resulting from enterprise performance. Therefore, the resource and strategy roles become low, but the monitoring role increases at this stage. By contrast, due to institutional investors assuming the role of supervision and having a positive effect on enterprises (Oviatt, 1988), the monitoring effects of general enterprise investors on enterprise performance are positive. The effects also have a rising trend at the start of the maturity stage. Therefore, this study proposes the following hypothesis:

Hypothesis 3-1: The positive impact of general enterprise investors on enterprise performance variation in the Taiwanese electrical and machinery industry increases as the trend shifts to the later stages of the corporate life cycle.

Firms that have access to organizational slack through banking relationships have better survival rates than firms that do not (Pajunen, 2006). At the growth stage, the funds are relatively important and financial institution investors may have a greater impact on corporate performance because the corporate governance goal is wealth creation and more resources are needed (Filatotchev et al., 2006). However, agency conflicts are especially severe when the organization matures (Jensen, 1986, 1993) because the freedom fund of the manager for operations increases. Thus, it is easy to encourage self-serving managerial behaviour (Gibbs, 1993), such as undertaking low-benefit or even value-destroying mergers or unrelated diversification because of unused borrowing power or large cash reserves (Chatterjee & Wernerfelt, 1991; Lang & Litztenberger, 1989; Lehn & Poulsen, 1989). At the decline stage, managers may make trade-offs that reduce income (Moses, 1987). They may also be forced to operate the company's profit because of severe self-serving managerial behaviour, which is caused by an even worse agency problem at this stage. Therefore, if an enterprise gains more freedom fund from financial institution investors, the risks on enterprise performance arise because of an increasing agency problem at the later stages. Thus, this study proposes the following hypothesis:

Hypothesis 3-2: The positive impact of financial institution investors on enterprise performance variation in the Taiwanese electrical and machinery industry decreases as the trend shifts to later stages in the corporate life cycle.

### 3. Research methods

#### 3.1. Data

The sample of this study was from the profit information of enterprises in the Taiwanese electrical and machinery industry of the Taiwan Economic Journal (TEJ). The study period is 25 years, from 1990 to 2014, and the data of this study are in line with the nesting characteristics between group, firm and time levels. Thus, this study divides the data of the Taiwanese electrical and machinery industry enterprises into group, firm and time effects. The group level is the sample from the parent companies; the firm level is the sample from the subsidiary companies of the parent companies; and the time level is the sample points of each subsidiary in different observation years, which means that the other influence changed over time without the group and firm levels. The current study uses the hierarchical linear model (HLM) (Bryk & Raudenbush, 1992) for statistical analysis to explore the influences on enterprise performance variations. Before the HLM analysis, this study also used factor and cluster analysis (Pashley & Philippatos, 1990) to divide the sample into growth, maturity and decline stages. The sample structure at different corporate life cycle stages is shown in Table 1.

#### 3.2. Variable description

Return on Assets (ROA) is an enterprise performance indicator in previous studies, including multilevel studies on enterprise performance with the HLM method (Karniouchina et al., 2013; McGahan & Porter, 1997; Misangyi, Elms, Greckhamer & Lepine, 2006; Roquebert, Phillips, & Westfall, 1996; Short et al., 2006). Thus, the present study uses ROA as a variable of enterprise performance variations in order to compare the effects of the three-level effects on enterprise performance (i.e. ROA) with previous



**Table 1. Sample structure of Taiwanese electrical and machinery industry enterprises**

Number of Samples	Full Period	Growth Stage	Maturity Stage	Decline Stage
Group level	105 <sup>a</sup>	98	45	36
Firm level	1534	1065	477	290
Time level	7153	5250	1200	703

Notes: <sup>a</sup>The original group sample was 126. Based on this study, the group of Taiwanese electrical and machinery industry from the Taiwan Economic Journal and its profit information tables, which were operated in different regions, were compared, resulting in 105 samples.

studies in the later section. Besides the group, firm and time effects of the Taiwanese electrical and machinery industry enterprises, this study also explores the influences of different institutional investors on enterprise performance variation. Moreover, different types of institutional investors are included in the firm level as explanatory variables, which are null variables. This study likewise discusses the influences of general enterprise or financial institution investors on enterprise performance variation of the Taiwanese electrical and machinery industry and distinguishes between domestic and foreign institutional investors. Lastly, this study uses the factor and cluster method to divide the corporate life cycle. We referred to Pashley and Philippatos (1990), who used 18 financial ratios<sup>5</sup> as the basis for factor analysis.

### 3.3. Division of corporate life cycle

#### 3.3.1. Factor and cluster analysis

Past studies have different ways of dividing the corporate life cycle, such as factor and cluster analysis (Pashley & Philippatos, 1990), Anthony Tierce Procedure (Anthony & Ramesh, 1992) and cash flow patterns (Dickinson, 2011). However, previous studies (e.g. Shyu & Chen, 2009) show that the factor and cluster method has high reliability. Therefore, this study used the factor and cluster method of Pashley and Philippatos (1990). In terms of factor analysis, after financial indicators were calculated and the sample points screened, the final sample of the corporate life cycle presented a total of 126 group samples and 1953 group sample points. The 15 financial indicators were used for factor analysis, and three factors were named according to the analysis results, namely, solvency, profitability and market capacity. Then, this study used cluster analysis to divide the sample points<sup>6</sup> into three clusters based on the three factors, which is the effective technique for dividing corporate life cycle (Pashley & Philippatos, 1990). The three clusters are the three stages of the corporate the life cycle in the Taiwanese electrical and machinery industry; each cluster represents the growth, maturity, and decline stages.

#### 3.3.2. Verification of the division of corporate life cycle

After factor analysis, this study examined the KMO value and found the value was  $>0.7$ , which is suitable for factor analysis. Meanwhile, the spherical test results of Bartlett's chi-square value of 22,036.83,  $P < 0.001$ , which represented the analysis of the variance, was significant. A verification was conducted to ensure the accuracy of the cluster analysis. Our study found that the value of single factor variance analysis was 0.008 and  $<0.01$ . Therefore, the test is significant and the data are consistent. Moreover, the factor and cluster analyses confirm the reliability of the division of the corporate life cycle. The analysis results are also effectively distinguished at different corporate life cycle stages.

### 3.4. Statistical model

#### 3.4.1. Hierarchical linear model

Past studies on enterprise performance variations often use variance component analysis (VCA) and ANOVA. Variables assumed among different levels are independent (Misangyi et al., 2006).

However, the relationship between companies and institutions is “nested” (Raudenbush & Bryk, 2002), whereas VCA and ANOVA can only deal with single-level variables and cannot handle different levels of variables at the same time. Therefore, scholars employ HLM (Bryk & Raudenbush, 1992) to explore the influences of different levels of companies on enterprise performance variations. The advantages of HLM allow for unequal observations per level, indicating that the sample points of time observations allow inconsistency when using time series data (Raudenbush & Bryk, 2002). Therefore, HLM is consistent with the data characteristics of financial databases previously mentioned. The current study uses HLM as its statistical model to explore the influences on enterprise performance variations. Hofmann (1997) refers to different models of HLM, in which the fully unconditional null model can be employed as a cross-level ANOVA component. On the contrary, the random coefficient regression model can perform the same level with different explanatory variables of regression analysis. This research uses the fully unconditional null model to explore the influences of groups, firms and time effects on enterprise performance variations. It also employs the random coefficient regression model to add certain types of institutional investor indicators into firm-level effects as explanatory variables. Thus, we can explore the influences of institutional investors on them in the Taiwanese electrical and machinery industry.

### 3.4.2. Model 1: fully unconditional null model

In this study, the fully unconditional null model of the HLM as model 1 is used to analyse the influences of group, firm and time effects on enterprise performance variations, and the inter-class coefficient (ICC) (Cohen, 1988), which is from the variances of different effects, is calculated as the proportion of the effects. If  $r$  is the variance of time level,  $\mu_\sigma$  is the variance of firm level and  $\mu_\tau$  is the variance of group level (taking time effect as an example), then the percentage of time variance to total variance is

$$[r/(r + \mu_\sigma + \mu_\tau)] \times 100 \tag{1}$$

The following is the statistical architecture of Model 1.

$$\begin{aligned} \text{Level 1} &: \pi_{tij} = \sigma_{0ij} + S_{tij} \\ \text{Level 2} &: \sigma_{0ij} = \tau_{00j} + P_{0ij} \\ \text{Level 3} &: \tau_{00j} = \epsilon_{000} + Q_{00j} \end{aligned}$$

$$\text{Mixed model} : \pi_{tij} = \epsilon_{000} + Q_{00j} + P_{0ij} + S_{tij} \tag{2}$$

where  $t$  is the year, 1990–2014;  $i$  is the  $i$  firm;  $j$  is the  $j$  group.  $\pi_{tij}$  is under the  $j$  group, the performance of  $i$  firm at  $t$  time;  $\sigma_{0ij}$  is under the  $j$  group, the average performance of  $i$  firm;  $\tau_{00j}$  is under the  $j$  group, the average performance of  $j$  group; and  $\epsilon_{000}$  is the total average performance of all samples.  $S_{tij}$  is the random effect of the time level. This effect measures the error between the performance of firm  $ij$  at  $t$  time and the average performance of firms. We suppose the effect obeys a normal distribution with an average of 0 and a variance of  $r$ .  $P_{0ij}$  is the random effect of the firm level. This effect measures the error between the average performance of firm  $ij$  and the average performance of the  $j$  group. We also claim that the effect obeys a normal distribution with an average of 0 and a variance of  $\mu_\sigma$ .  $Q_{00j}$  is the random effect of the group level, and it measures the error between the average performance of  $j$  group and the total average performance. We expect that the effect obeys a normal distribution with an average of 0 and a variance of  $\mu_\tau$ .

### 3.4.3. Model 2: institutional investor indicators within the firm level

Our study also adds certain types of institutional investor indicators into the firm-level effects as explanatory variables. Therefore, Model 2 becomes a random coefficient regression model. The statistical architecture of Model 2 is as follows:

$$\begin{aligned}
 \text{Level 1 : } \pi_{tij} &= \sigma_{0ij} + S_{tij} \\
 \text{Level 2 : } \sigma_{0ij} &= \tau_{00j} + \tau_{01j}(\text{Shareholder})_{ij} + \rho_{0ij} \\
 \text{Level 3 : } \tau_{00j} &= \varepsilon_{000} + \rho_{00j} \\
 \tau_{01j} &= \mu_{010} \\
 \text{Mixed model : } \pi_{tij} &= \varepsilon_{000} + \rho_{00j} + \mu_{010}(\text{Shareholder})_{ij} + \rho_{0ij} + S_{tij} \tag{3}
 \end{aligned}$$

(Shareholder)<sub>ij</sub> represents the collected null variables of the institutional investor of firm *ij* which is the institutional investor index constructed by this study.

#### 4. Research results

##### 4.1. Model 1: fully unconditional null model analysis results

Table 2 presents the effects of different levels within enterprises on enterprise performance, which is expressed by the regression coefficient (Coe.). The table also displays the direction of such effects, which may also be expressed by ICC, as presented in Equation (1). Moreover, the relative importance (percentage of standard deviation, STD%)<sup>7</sup> (Brush & Bromley, 1997; Brush, Bromily & Hendrickx, 1999) improves the calculation method of ICC. If *r* is the variance of time level,  $\mu_\sigma$  is the variance of firm level and  $\mu_\tau$  is the variation of group level, and then the calculation is as follows:

$$\left[ \frac{r^{1/2}}{[r^{1/2} + (\mu_\sigma)^{1/2} + (\mu_\tau)^{1/2}]} \right] \times 100 \tag{4}$$

In the analysis results of Model 1, the whole period of the Taiwanese electrical and machinery industry has a significant positive impact on the average performance. In terms of different life cycle stages, such as growth, maturity or decline stage, the influence of group effect on enterprise performance variation is small and accounts for 10–25%. Our study uses ROA as the firm performance variable, which indicates the importance of the asset utilization efficiency of firms. The influence of firm effect on enterprise performance variation accounts for 51–60%, which reveals that the asset utilization efficiency of firms is extremely high. Firm effect on the enterprise performance variation of each stage in Taiwan electrical and machinery industry is the largest at the growth stage, followed by the decline stage and the mature stage. Furthermore, the firm effect does not decrease as the trend shifts to later stages of the corporate life cycle. By contrast, group effect on the enterprise performance variation of each stage is the largest at the mature stage, followed by the growth stage and the decline stage. Therefore, our results confirm that the group effect in Taiwan’s electrical and machinery industry does not increase as the trend shifts to later stages of the corporate life cycle (Table 2).

The results in Model 1 reveal that group effect is the largest at the mature stage, whereas firm effect is the smallest. Our study considers that at the mature stage, groups have reached synergy, which can be effectively reflected in their enterprise performance. We also believe that at the decline stage, group effect on enterprise performance variation greatly reduces and firm effect rises. This result is different from that of general studies at the decline stage. We consider that the influence of enterprises on enterprise performance variation is mainly from firm ability rather than group strategic planning at the decline stage.

**Table 2. Fully unconditional null model analysis of Taiwan’s electrical and machinery industry (Enterprise performance variable: ROA)**

Statistics	Whole Period	Growth Stage	Mature Stage	Decline stage
Average Performance (Coe.)	0.65 ***	0.61 ***	0.93 **	0.82 **
Group Effect (STD%)	12.36 ***	12.03 **	25.23 ***	9.99 **
Firm Effect (STD%)	61.13 ***	60.29 ***	51.93 ***	57.67 ***
Time Effect (STD%)	26.52	27.68	22.84	32.33

**Table 3. ROA as the variable of enterprise performance and HLM as the statistical method**

Authors	Misangyi et al. (2006)	Short et al. (2006)	Karniouchina et al. (2013)	This Study
Period	1984–1999	1995–2001	1979–1994	1990–2014
Group (Corporate) effect	7.2	N/A	15.5	12.36
Firm (Business-unit) effect	36.6	45.01	38.46	61.13
Time effect	47.8	46.67	41.84	26.52

Compared with past literature in which the subjects are all industry-excluded financial industry and the databases are all Compustat databases, they used ROA as the variable of enterprise performance and HLM as the statistical method. During the whole period, our group effect (12.36%) is similar with that in previous literature (7.2–15.5%). By contrast, our firm effect (61%) is significantly higher than that in past literature (36.5–45.01%). Therefore, the firm effect of the Taiwanese electrical and machinery industry has an important role in enterprise performance. In addition, our time effect (26.52%) is significantly lower than that in previous literature (41.84–47.8%). Thus, enterprise performance variation of the Taiwanese electrical and machinery industry is not greatly affected by timing changes. Time effect (uninterpretable variation) on enterprise performance variation is close at the growth and mature stages. It also increases significantly at the decline stage, accounting for 32% of the overall enterprise performance variation (Table 3).

#### 4.2. Model 2: institutional investor indicators within the firm level

Our firm effect (61%) is the highest of the three effects, and other factors may influence enterprise performance variation. Therefore, the enterprise performance variation affected by other factors may come from the firm level. Thus, institutional investor indicators are placed within the firm level for in-depth discussion. During the whole period, which involves foreign, domestic, general enterprise or financial institution investors, the impact on enterprise performance is negative. Moreover, influences on enterprise performance variation are approximately 10%. However, institutional investors have different effects on enterprise performance (variation) at different stages. The impact of these institutional investor indicators on enterprise performance is presented in Table 4. If we only consider the results of the whole period, then the performance of institutional investors may be negative due to their impact. Therefore, the positive contribution is neglected. At the growth stage, the effect of domestic financial institutions investors on enterprise performance is positive. At the decline stage, the effect of domestic general enterprise investors on enterprise performance is also positive. At the mature stage, all types of institutional investors only have a small impact on enterprise performance

**Table 4. Analysis results of institutional investor indicators within the firm level in Taiwan's electrical and machinery industry**

Statistics	Whole Period		Growth Stage		Mature Stage		Decline Stage	
	Coe.	STD %	Coe.	STD %	Coe.	STD %	Coe.	STD %
Domestic General Enterprise	-4.29*	11.28	-0.66	9.32	-26.68**	2.52	0.03	28.47
Domestic Financial Institution	-4.4*	10.58	0.36	19.48	-5.64**	0.45	-0.28	3.10
Foreign General Enterprise	-4.3*	10.39	-0.83*	17.83	-26.73**	2.53	-0.02	16.08
Foreign Financial Institution	-4.14**	10.17	-0.50***	11.70	-26.93***	2.52	-0.13	12.14

because firm establishment is relatively stable at the mature stage and institutional investors do not need to supervise firms. Therefore, institutional investors have limited influences on firm performance variation.

The impact of foreign institutional investors in the Taiwanese electrical and machinery industry on enterprise performance is negative at any stage of corporate life cycle. Negative influences on enterprise performance variation are also observed. These influences are approximately 14% high at the growth and decline stages, whereas negative influences are 2.5% low at the mature stage. Therefore, our results confirm that the positive impact of foreign institutional investors on the enterprise performance variation in the Taiwanese electrical and machinery industry does not decrease as the trend shifts to later stages of the corporate life cycle. At the enterprise growth stage, the effect of domestic financial institution investors on enterprise performance is positive. At the mature stage, general enterprise or domestic financial institution has a significant negative impact on enterprise performance. At the decline stage, the effect of domestic general enterprise investors on enterprise performance becomes positive. The influence of the overall domestic institutional investors on enterprise performance variation is approximately 14.4% at the growth stage, 1.5% at the mature stage and 15.7% at the decline stage. Therefore, the positive impact of domestic institutional investors on the enterprise performance variation in Taiwan's electrical and machinery industry does not decrease as the trend shifts to later stages of the corporate life cycle. However, excluding the negative influences of domestic institutional investors on enterprise performance variation at the mature stage, positive influences increase from the growth to the decline stage. Therefore, during the high enterprise risk period, domestic institutional investors positively and significantly affect enterprise performance (Table 5).

Institutional investors can also be classified into general enterprises and financial institution investors by their business attributes. If such attributes are the basis, then the negative influence of general enterprise investors on enterprise performance variation is 13.6% at the growth stage and 2.5% at the mature stage. However, at the decline stage, domestic general enterprise investors make the impact positive. Our study considers that the negative influence of the overall general enterprise investors decreases as the trend shifts to later stages. The positive impact of general enterprise investors on the enterprise performance variation in Taiwan electrical and machinery industry likewise increases as the trend shifts to the later stages of the corporate life cycle. Domestic financial institution investors have a positive effect on enterprise performance at the growth stage. At the mature stage, foreign or domestic financial institution investors have a negative influence of 1.49%, which increases to 7.62% at the decline stage. Moreover, the positive impact of financial institution investors on enterprise performance variation in Taiwan electrical and machinery industry decreases as the trend shifts to the later stages of the corporate life cycle. Additionally, domestic financial institution investors have a positive impact on enterprise performance at the growth stage. The current study considers this outcome to be due to the objectives of corporate governance at the growth stage being value creation, and thus pays more attention to financial resources (Filatotchev et al., 2006) (Table 6).

The average performance of the Taiwanese electrical and machinery industry at different life cycle stages is greater than zero. This result is different from the general perception that enterprise performance is negative at the decline stage. Therefore, our study suggests that the decline stage

**Table 5. Institutional investor indicators classified by capital attribute within the firm level in Taiwan's electrical and machinery industry**

Statistics (STD %)	Whole Period	Growth Stage	Mature Stage	Decline Stage
Foreign	10.28	14.77	2.53	14.11
Domestic	10.93	14.40	1.49	15.79

**Table 6. Institutional investor indicators classified by business attributes within the firm level in Taiwan’s electrical and machinery industry**

Statistics (STD %)	Whole Period	Growth Stage	Mature Stage	Decline Stage
General Enterprise	10.84	13.58	2.53	22.28
Financial Institution	10.38	15.59	1.49	7.62

is the turnaround of enterprises. The ownership structure of a firm may have significant effects on the actions taken during turnaround (Cater & Schwab, 2008). Moreover, the environment during industrial decline may shift towards a more strategic involvement of institutional investors (Filatotchev & Toms, 2003). Thus, the influences of institutional investors are also important factors in the turnaround of firms, which usually occurs at the decline stage of the corporate life cycle. In addition, corporate mergers and acquisitions will increase at the decline stage, with the main company announcing the merger of the target company, and company stock price will have a positive return (Kohers & Kohers, 2000). Therefore, at the decline stage, due to the increase in corporate mergers and acquisitions that result in retrenchment strategies, general enterprise investors have a positive impact on the performance of the target enterprise. The positive impact is beneficial for the turnaround of the target enterprise. But the research result of this study only the effect of domestic enterprise general investors has a positive impact on enterprise performance at the decline stage. Thus, the result is partially consistent with the following condition, and the domestic general enterprise investors plays an important role in the enterprise performance at the decline stage.

Furthermore, domestic or foreign financial institution investors have negative impacts at the mature and decline stages. That may cause by there is with a unique capital structure, weak property and shareholders rights exist in many enterprises in East Asia, and thus retrenchment actions should be taken regardless of whether or not they have significant difference (Claessens, Djankov, & Lang, 2000; Young, Ahlstrom, Bruton, & Chan, 2001). Financial institution investors, such as banks, also have considerable power to make decisions for a firm in distress (Bruton, Ahlstrom, & Wan, 2003; McKinley, Latham, & Braun, 2013). Even if enterprises adopt asset retrenchment strategies, financial institutional investors cannot reap the benefits of asset liquidation due to weak property rights. They may also limit the execution of retrenchment strategies through stronger force at the decline age, blocking the turnaround of the enterprise at this stage. Thus, financial institution investors do not only face the risks above but also have negative effects at the decline stage of the corporate life cycle. Half of the firms in this study are in the Taiwanese electrical and machinery industry affiliated with East Asia. Therefore, this scope limits the turnaround of the enterprises and the negative effects from financial institution investors at the decline stage.

Our study claims that these turnaround situations occur because enterprises have good interactive strategies facing the environment during such situations, thus promoting the turnaround of corporate life cycle. Different institutional investors of enterprises can be regarded as factors of the enterprise environment. The interaction with enterprises can also be regarded as a problem faced by enterprises. Our study refers to Dodge and Robbins (1992), who mention the three issues faced by small- and medium-sized enterprises. Market issues are considered external problems, whereas management and financial issues are internal problems. Enterprises deal with many market and financial issues at the growth stage. They mainly face market issues at the maturity stage and management issues at the decline stage (Dodge & Robbins, 1992). These findings are consistent with our results. In addition, the relationships within Jawahar and Mclaughlin’s (2001) theory may help to understand that enterprises adopt different response strategies for institutional investors at different corporate life cycle stages.

Dodge and Robbins (1992) argue that firms face large market issues. The influence of foreign institution investors is greater than that of domestic institution investors, but all institutional investors only have a small impact on firm performance variation. Therefore, firms only deal with certain external market issues. Moreover, firms must meet foreign institutional investors and adopt adaptive strategies with moderate risk aversion rather than use positive strategies. The role of financial institution investors is important at the growth stage because firms face great financial issues. Apart from external market issues, firms must also deal with internal financial issues. They should also meet foreign and domestic institutional investors and adopt positive strategies with high-risk evasion. At the decline stage, firms mainly face internal management issues. Although firm performance may not be as good as that at the growth and mature stages, general enterprise investors have an evident impact on enterprise performance variation. Therefore, firms must meet the requirement of general enterprise investors. Apart from the defensive and reactive strategies mentioned by Jawahar and McLaughlin (2001), an adaptive strategy with moderate risk aversion can also be adopted. Therefore, our study considers that at the decline stage, firms in Taiwan's electrical and machinery industry may have appropriate interaction strategies with institutional investors, such as adopting defensive or adaptive strategies. Thus, firms still have a positive performance.

Our research indicates the positive enterprise performance at the decline stage in Taiwan electrical and machinery industry. However, due to the decreasing performance from over-diversification at the mature stage, implementing retrenchment strategies is necessary to maintain the past operations of enterprises. We also reveal that domestic institutional investors have a large and positive impact on enterprise performance variation. However, the resource injection and supervision of foreign institutional investors are not as good as expected. The reason is that given the geographical constraints, language transformation, culture and other systems, firms must interact with foreign institutional investors with additional resources. When firms are in a high-risk environment with limited resources at the growth and decline stages, needing help from foreign institutional investors may waste resources, thus diluting the resources of the turnaround strategy. Firms form the industrial cluster and central-satellite system in Taiwan and have become the core competitiveness of the overall Taiwan electrical and machinery industry. Thus, they can increase their strategic alliances with domestic upstream and downstream firms. However, considering the weak property and shareholder rights of the East Asian ownership structure, financial institutional investors often cannot gain benefits from the asset retrenchment strategy. At the decline stage, severe agency conflicts of enterprises raise institutional investors' supervision power. Monitoring the institutional investors also relatively reduces the importance of their strategic role in the enterprise turnaround. In addition, financial institution investors are the creditors to firms, resulting in the high financial leverage of invested firms and their greater responsibility to the financial institution investors. Therefore, a negative impact on enterprise turnaround is expected. Moreover, firms in the Taiwanese electrical and machinery industry should not operate by increasing debt at the decline stage. Our result at the mature stage is significantly different from those at the growth and decline stages. The empirical result of the corporate life cycle has an intermittent phenomenon, making directly judging the trend of each effect from growth to decline stage difficult. Our study argues that the internal organization of enterprises in the Taiwanese electrical and machinery industry may begin to change at their mature stages. Therefore, the turnaround can be formed at their decline stages.

## 5. Conclusion

The group effect of enterprises in the Taiwanese electrical and machinery industry is important at any stage of the corporate life cycle. At the mature stage, the coordination ability and resource sharing efficiency of various business units within the group have reached a certain level which is good for the stability of organizational system. Thus, the synergy of resource allocation is achieved. Firm effect on enterprise performance variation is up to 60%, implying that the cultivation of firm core competence is the key to the survival and profit of enterprises. Therefore, enterprises in the Taiwanese electrical and machinery industry can strengthen the strategic planning of the group

level at the mature stage. For instance, opening up overseas markets may create the maximum benefit for the whole enterprise through the synergy of the group. At the decline stage, firms must strengthen their core competence. In terms of the influence of institutional investors on enterprise performance variation, domestic general enterprise investors play an important role in the turnaround at the decline stage. Thus, firms should add resources to their cooperation with domestic general upstream and downstream firms, such as cross-industry alliance. Such an alliance can also help the cultivation of the firms' core competence, which will enhance their research and development and own technology innovation. In view of the different influences between domestic general enterprises and financial institution investors on enterprise performance, firms should consider the different influences brought by different types of institutional investors. They must also adapt appropriate interaction strategies to help the turnaround at the decline stage of the corporate life cycle.

Our research has certain restrictions. Firstly, our analysis results cannot be used as reference for the whole industry because of the specific industry discussed in our study. Therefore, future research must be conducted on the whole industry or the multi-industry for widely recognised research results. Secondly, the influence of different types of institutional investors on enterprise performance variation is significantly different. Our research discusses domestic and foreign capital, general enterprises and financial institutions. Future studies can increase the types of institutional investors, such as increasing the differences between public and private institutional investors and between family and non-family institutional investors, to further explore their influences. Thirdly, financial institution investors have a negative impact on enterprise performance at the mature and decline stages. Such results are different from those of past research with western companies as the research subject. The reason is that half of firms in the Taiwanese electrical and machinery industry are located in East Asia, where shareholder rights are weak. Therefore, future research can conduct in-depth discussions on the impact of institutional investors in different regions to understand the factors causing the difference. These discussions can provide practical management guidelines for multinational enterprises.

#### Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

#### Author details

Chiau-Shi Yang<sup>1</sup>

E-mail: [d10108205@mail.ntust.edu.tw](mailto:d10108205@mail.ntust.edu.tw)

ORCID ID: <http://orcid.org/0000-0003-3273-7237>

Jonchi Shyu<sup>1</sup>

E-mail: [shyu@ba.ntust.edu.tw](mailto:shyu@ba.ntust.edu.tw)

<sup>1</sup> Department of business administration, National Taiwan University of Science and Technology, No.43, Keelung Rd., Sec.4, Da'an Dist., Taipei City 10607, Taiwan (R.O.C.).

#### Citation information

Cite this article as: Do institutional investor and group, firm and time effects matter in enterprise performance in the corporate life cycle?, Chiau-Shi Yang & Jonchi Shyu, *Cogent Business & Management* (2019), 6: 1606473.

#### Cover image

Source: Author.

#### Notes

1. The output value is from the Taiwan Machinery Association.
2. The annual growth rates of output values calculated from Directorate-General of Budget, Accounting and Statistics, Executive Yuan, R.O.C; the rate of the semiconductor industry is 4% in 2017, and the rate of the machinery industry is 8% in 2017.
3. The enterprises' products of Taiwanese electrical and machinery industry are used in fields such as

electronics, biomedical, chemical and various others related to mechanical equipment.

4. A stakeholder in an organization is any group or individual who can affect or is affected by the achievement of the organization's objectives (Freeman, 1984). An institutional investor is one type of stakeholder.
5. The 18 financial ratio variables include market share, Lerner Index, Tobin-Q, excess market value, redundant cash measure, quick ratio, current ratio, interest-bearing debts measure, debt-to-asset, degree of financial leverage, dividend payout, dividend yield, operating return on total assets, net profit margin, return on net worth, earnings available to common stock to sales, total asset turnover and fixed asset turnover.
6. The sample points of each firm are from 1990 to 2014. Table 1 presents the total sample points, which number 7,153 in the time level. The classification of clusters is based on three factors by 15 financial indicators rather than the time series of the individual firm because the division of different stages within the corporate life cycle presents the characteristics of the group performances. These performances determine the stage of the enterprise, namely, growth, maturity or decline, while the effect generated by the change of time series can be represented by the time level at each stage of the corporate life cycle.
7. Brush, Bromily and Hendrickx (1999) mentioned the reason for using relative importance is that the firm level has a positive bias, that is, it has an error when the enterprise data are classified by industries and the firm level has undertaken the variance of the group level which the firm belongs to. Therefore, the variance of each level must be treated with a root number first in



order to reduce the variance caused by the error of positive bias.

## References

- Acquaah, M. (2012). Social networking relationships, firm-specific managerial experience and firm performance in a transition economy: A comparative analysis of family owned and nonfamily firms. *Strategic Management Journal*, 33(10), 1215–1228. doi:10.1002/smj.v33.10
- Anthony, J. H., & Ramesh, K. (1992). Association between accounting performance measures and stock prices: A test of the life cycle hypothesis. *Journal of Accounting and Economics*, 15(2), 203–227. doi:10.1016/0165-4101(92)90018-W
- Bibeault, D. G. (1982). *Corporate turnaround: How managers turn losers into winners*. New York, NY: McGraw-Hill.
- Brush, T. H., & Bromiley, P. (1997). What does a small corporate effect mean? A variance components simulation of corporate and business effects. *Strategic Management Journal*, 18(10), 825–835. doi:10.1002/(ISSN)1097-0266
- Brush, T. H., Bromiley, P., & Hendrickx, M. (1999). The relative influence of industry and corporation on business segment performance: An alternative estimate. *Strategic Management Journal*, 20(6), 519–547. doi:10.1002/(ISSN)1097-0266
- Bruton, G. D., Ahlstrom, D., & Wan, J. C. (2003). Turnaround in East Asian firms: Evidence from ethnic overseas Chinese communities. *Strategic Management Journal*, 24, 519–540. doi:10.1002/smj.312
- Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models for social and behavioral research: Applications and data analysis methods*. Newbury Park, CA: Sage.
- Carroll, A. B. (1979). A three dimensional conceptual model of corporate social performance. *Academy of Management Review*, 4, 497–505. doi:10.5465/amr.1979.4498296
- Cater, J. J., & Schwab, A. (2008). Turnaround strategies in established small family firms. *Family Business Review*, 21, 31–50. doi:10.1111/j.1741-6248.2007.00113.x
- Chatterjee, S., & Wernerfelt, B. (1991). The link between resources and type of diversification theory and evidence. *Strategic Management Journal*, 12, 33–48. doi:10.1002/smj.4250120104
- Claessens, S., Djankov, S., & Lang, L. H. P. (2000). The separation of ownership and control in East Asian corporations. *Journal of Financial Economics*, 58, 81–112. doi:10.1016/S0304-405X(00)00067-2
- Coff, R. (1999). When competitive advantage doesn't lead to performance: The resource-based view and stakeholder bargaining power. *Organization Science*, 10(2), 119–133. doi:10.1287/orsc.10.2.119
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Mahwah, NJ: Erlbaum.
- Davis, D. (1993). *How to turn round a company*. Simon & Schuster: Singapore.
- Deville, A., Ferrier, G. D., & Leleu, H. (2014). Measuring the performance of hierarchical organizations: An application to bank efficiency at the regional and branch levels. *Management Accounting Research*, 25(1), 30–44. doi:10.1016/j.mar.2013.07.001
- Dickinson, V. (2011). Cash flow patterns as a proxy for firm life cycle. *The Accounting Review*, 86(6), 1969–1994. doi:10.2308/accr-10130
- Dodge, H. J., & Robbins, I. E. (1992). An empirical investigation of the organizational life cycle model for small business development and survival. *Journal of Small Business Management*, 30(1), 27–37.
- Filatotchev, I., Lien, Y. C., & Piesse, J. (2005). Corporate governance and performance in publicly listed, family-controlled firms: Evidence from Taiwan. *Asia Pacific Journal of Management*, 22(3), 257–283. doi:10.1007/s10490-005-3569-2
- Filatotchev, I., & Toms, S. (2003). Corporate governance, strategy and survival in a declining industry: A study of UK cotton textile companies. *Journal of Management Studies*, 40, 895–920. doi:10.1111/1467-6486.00364
- Filatotchev, I., Toms, S., & Wright, M. (2006). The firm's strategic dynamics and corporate governance life-cycle. *International Journal of Managerial Finance*, 2(4), 256–279. doi:10.1108/17439130610705481
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Harper Collins.
- Ganco, M., & Agrawal, R. (2009). Performance differentials between diversifying entrants and entrepreneurial start-ups: A complexity approach. *Academy of Management Review*, 34, 228–252. doi:10.5465/amr.2009.36982618
- Gibbs, P. A. (1993). Determinants of corporate restructuring: The relative importance of corporate governance, takeover threat, and free cash flow. *Strategic Management Journal*, 14(S1), 51–68. doi:10.1002/(ISSN)1097-0266
- Gupta, Y., & Chin, W. (1993). Strategy-making and environment: An organizational life cycle perspective. *Technovation*, 13, 27–44. doi:10.1016/0166-4972(93)90012-K
- Hofmann, D. A. (1997). An overview of the logic and rationale of hierarchical linear models. *Journal of Management*, 23(6), 723–744. doi:10.1177/014920639702300602
- Huang, R. D., & Shiu, C. Y. (2008). Local effects of foreign ownership in an emerging financial market: Evidence from qualified foreign institutional investors in Taiwan. *Financial Management*, 38(3), 567–602. doi:10.1111/j.1755-053X.2009.01048.x
- Jawahar, I. M., & McLaughlin, G. L. (2001). Toward a descriptive stakeholder theory: An organizational life cycle approach. *Academy of Management Review*, 26(3), 397–414. doi:10.5465/amr.2001.4845803
- Jensen, M. C. (1986). Agency costs of free cash flows, corporate finance and take-overs. *American Economic Review*, 76(2), 323–329.
- Jensen, M. C. (1993). The modern industrial revolution, exit and the failure of internal control systems. *Journal of Finance*, 48(3), 831–880. doi:10.1111/j.1540-6261.1993.tb04022.x
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decisions under risk. *Econometrica*, 47, 263–291. doi:10.2307/1914185
- Karniouchina, E. V., Carson, S. J., Short, J. C., & Ketchen, D. J. (2013). Extending the firm vs. industry debate: Does industry life cycle stage matter? *Strategic Management Journal*, 34(8), 1010–1018. doi:10.1002/smj.2013.34.issue-8
- Kohers, K., & Kohers, T. (2000). The value creation potential of high-tech mergers. *Financial Analysts Journal*, 56(3), 40–50. doi:10.2469/faj.v56.n3.2359
- Lang, L. H. P., & Litztenberger, R. (1989). Dividend announcements: Cash flow signaling versus free cash flow hypothesis. *Journal of Financial Economics*, 24, 181–191. doi:10.1016/0304-405X(89)90077-9
- Lawrence, P., & Lorsch, J. (1968). *Organization and environment*. Homewood, IL: Irwin.
- Lehn, K., & Poulsen, A. (1989). Free cash flow and stockholder gains in going private transactions. *Journal of*

- Finance*, 44, 771–787. doi:10.1111/j.1540-6261.1989.tb04390.x
- Lester, D. L., Parnell, J. A., & Carraher, S. (2003). Organizational life cycle: A five-stage empirical scale. *International Journal of Organizational Analysis*, 11(4), 339–354. doi:10.1108/eb028979
- Liao, W. C., Shyu, J., & Szu-Min, C. (2014). A corporate life cycle analysis on the relationship between ownership structure and performance: Evidence from the Taiwan stock exchange. *Asia Pacific Management Review*, 19(2), 179–n/a.
- Mahmood, I. P., Zhu, H., & Zaheer, P. (2017). Centralization of intragroup equity ties and performance of business group affiliates. *Strategic Management Journal*, 38(5), 1082–1100. doi:10.1002/smj.2542
- McConnell, J. J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics*, 27(2), 595–612. doi:10.1016/0304-405X(90)90069-C
- McGahan, A. M., & Porter, M. E. (1997). How much does industry matter, really? *Strategic Management Journal*, 18(Summer Special Issue), 15–30.
- McKinley, W., Latham, C., & Braun, M. (2013). Organizational decline and innovation: Turnarounds and downward spirals. *Academy of Management Review*, 39(1), 1277–1307.
- Miles, G., Snow, C. C., & Sharfman, M. P. (1993). Industry variety and performance. *Strategic Management Journal*, 14(3), 163–177. doi:10.1002/(ISSN)1097-0266
- Miller, D., & Friesen, P. H. (1983). Strategy-making and environment: The third link. *Strategic Management Journal*, 4, 221–235. doi:10.1002/(ISSN)1097-0266
- Miller, D., & Friesen, P. H. (1984). A longitudinal study of the corporate life cycle. *Management Science*, 30(10), 1161–1183. doi:10.1287/mnsc.30.10.1161
- Misangyi, V. F., Elms, H., Greckhamer, T., & Lepine, J. A. (2006). A new perspective on a fundamental debate: A multilevel approach to industry, corporate, and business unit effects. *Strategic Management Journal*, 27(6), 571–590. doi:10.1002/(ISSN)1097-0266
- Moses, O. D. (1987). Income smoothing and incentives: Empirical tests using accounting changes. *The Accounting Review*, 62(2), 358–377.
- Oviatt, B. M. (1988). Agency and transaction cost perspectives on the manager-shareholder relationship: Incentives for congruent Interest. *The Academy of Management Review*, 13(2), 214–225. doi:10.5465/amr.1988.4306868
- Pajunen, K. (2006). Stakeholder influences in organizational survival. *Journal of Management Studies*, 43(6), 1261–1288. doi:10.1111/joms.2006.43.issue-6
- Pashley, M. M., & Philippatos, G. C. (1990). Voluntary divestitures and corporate life-cycle: Some empirical evidence. *Applied Economics*, 22(9), 1181–1196. doi:10.1080/00036849000000038
- Pennings, J. M. (1992). Structural contingency theory: A reappraisal. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 14, pp. 267–309). Greenwich, CT: JAI Press.
- Phung, D. N., & Mishra, A. V. (2015). Ownership structure and firm performance: Evidence from vietnamese listed firms. *Australian Economic Papers*, 55(1), 63–98. doi:10.1111/1467-8454.12056
- Porter, M. (1980). *Competitive strategy*. Free Press: New York, NY.
- Porter, M. (1990). *The competitive advantage of nations*. London: Macmillan.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models* (2nd ed.). Thousand Oaks: Sage Publications.
- Robbins, D. K., & Pearce, J. A. (1992). Turnaround: Retrenchment and recovery. *Strategic Management Journal*, 13(4), 287–309. doi:10.1002/(ISSN)1097-0266
- Roquebert, J. A., Phillips, R. L., & Westfall, P. A. (1996). Markets vs. management: What drives profitability? *Strategic Management Journal*, 17(8), 653–664. doi:10.1002/(ISSN)1097-0266
- Rumelt, R. P. (1991). How much does industry matter? *Strategic Management Journal*, 12(3), 167–185. doi:10.1002/(ISSN)1097-0266
- Short, J. C., Ketchen, D. J., Bennett, N., & Du Toit, M. (2006). An examination of firm, industry, and time effects on performance using random coefficients modeling. *Organizational Research Methods*, 9(3), 259–584. doi:10.1177/1094428106287572
- Shyu, J., & Chen, Y. L. (2009). Diversification, performance and the corporate life cycle. *Emerging Markets Finance and Trade*, 45(6), 57–68. doi:10.2753/REE1540-496X450604
- Wartick, S. L., & Cochran, P. L. (1985). The evolution of the corporate social performance model. *Academy Of Management Review*, 10, 758–769. doi:10.5465/amr.1985.4279099
- Xia, F., & Walker, G. (2015). How much does owner type matter for firm performance? Manufacturing firms in China 1998–2007. *Strategic Management Journal*, 36(4), 576–585. doi:10.1002/smj.2233
- Young, M. N., Ahlstrom, D., Bruton, G. D., & Chan, E. S. (2001). The resource dependence, service and control functions of boards of directors in Hong Kong and Taiwanese firms. *Asian Pacific Journal of Management, Special Issue on Corporate Governance in Newly Emerging Economies*, 18, 223–244.



© 2019 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format.

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.



***Cogent Business & Management* (ISSN: 2331-1975) is published by Cogent OA, part of Taylor & Francis Group.**

**Publishing with Cogent OA ensures:**

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

**Submit your manuscript to a Cogent OA journal at [www.CogentOA.com](http://www.CogentOA.com)**

