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Three Essays on Corporate Finance

기업재무에 관한 연구

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서울대학교 대학원

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이 논문을 경영학 박사 학위논문으로 제출함
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위 원 장   이 관 휘   (인)

부위원장   이 종 섭   (인)

위 원   김 우 진   (인)

위 원   최 동 범   (인)

위 원   Shu-Feng Wang   (인)

Abstract

Three Essays on Corporate Finance

Tae Jun Yoon

Department of Finance

College of Business Administration

Seoul National University

This thesis consists of three articles, each of which studies a specific aspect of corporate finance. The first essay examines the financing and investment of the *Ausgliederung*-implementing firms. *Ausgliederung* is a legal system that allows a company to form a wholly-owned subsidiary by dividing some of the business units in which it operates. "Pair" consists of a pair of a carved parent company and a new subsidiary, raises more funds through stock issuance, and invests more than other listed firms. This result is primarily driven by the small new subsidiary, not the parent company. In addition, the increase in investment is more pronounced when the newly-established subsidiary is in an industry with high capital intensity and high investment. However, non-controlling shareholders of the parent company react negatively to the announcement as they have to share the future profits of the subsidiary with new shareholders.

The second essay investigates whether SPACs help private firms with high information asymmetry go public and how private firms' financing and investment following listing differ from before listing. We compare Korean 110 SPAC (Special Purpose Acquisition Company) mergers to 627 traditional IPOs from 2010 to 2021. A Korean empirical setting allows us to exploit the quasi-experiment of incentive-aligned SPAC sponsors and private firms' pre-listing characteristics and post-listing performance. I find that private firms with smaller size, fewer sales, or less profits are likely to use SPAC mergers relative to traditional IPOs for listings. In addition, using the difference-in-differences method, we find that SPAC merged firms increase subsequent financing and net investment more than IPO companies after going public. Particularly, additional financing is conducted via equity issuances such as right offerings or private placements. Overall, our results suggest that SPACs facilitate private firms with information asymmetry access to the public market and enable them to finance and invest more.

The third essay explores the effect of a CEO's long-term orientation captured by the last name on investment decision-making. The last name is passed down to descendants through paternal lineage, providing an opportunity to explore the cultural heritage that influences the CEO's decision-making. U.S. firms with CEOs whose ancestors immigrated from cultures with high long-term orientation 1) spend more capital expenditure, 2) more acquisitions, and 3) spend more on R&D relative to their total assets. This result is more significant when the CEO is an immigrant and when the CEO is a founder. The results of this study remain the same even after controlling for other cultural factors that influence CEOs' economic preferences.

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Chapter 1. Equity Financing Through Wholly-owned Subsidiary: Implications for Pyramid Formation

1.1. Introduction

Because of various reasons, controlling shareholders are incentivized to expand the size of the business group they control. A large business group provides greater private benefits to the controlling shareholders (Barclay and Holderness, 1989). A larger internal capital market improves financing efficiency, making it easier for them to accumulate wealth (Gertner et al., 1994; Stein, 1997). Moreover, controlling shareholders experience self-fulfillment and emotional satisfaction from expanding the business group (Foo et al., 2009; Shir et al., 2018).

However, external financing, which is essential to the expansion of a business group, can increase the risk of losing control, limiting the controlling shareholders' desire for expansion. Issuing new shares to raise funds will dilute their control unless they acquire a higher proportion of new shares than their existing ownership. For this reason, some studies have revealed that controlling shareholders prefer an issue of debt; thus, firms with such shareholders tend to have a high debt ratio (Ellul, 2008; Croci et al., 2011). However, debt cannot always be a perfect answer for the controlling

shareholders. Because of the increased risk of bankruptcy associated with increased debt, a severe downward shock could instantly result in the controlling shareholders losing control. Thus, this method of expansion using debt has limitations, especially in countries with strong creditor rights protection, as it is easier for controlling shareholders to lose control (Faccio et al., 2010).

Calling this situation the "capitalist's quandary," the founder of Nissan, Yoshisuke Aikawa, suggested pyramidal groups as a solution. He expanded Nissan quickly in the following way: Nissan Group Affiliate A created Subsidiary B and owned 100% of its shares; Company B issued shares to raise funds and grow its business. As a result, Yoshisuke's ownership in Company B was diluted to some degree, but he still retained control. Subsequently, Company B created Subsidiary C, of which Company B owned 100%, and Company C raised funds by issuing stocks to investors as Company B did in the past. As a result, Nissan Group's total assets, which stood at 91.08 million JPY in 1933, grew quickly to 383.1 million JPY four years later by 1937 (Morck and Nakamura, 2005). Using the pyramid structure to expand the business group, Yoshisuke maintained various profitable business opportunities under his control, and share issuances by subsidiaries at the bottom of the pyramid made this possible.

In Nissan's case, issuing shares to external investors was crucial to expanding the business group and forming the pyramidal structure. Although the internal capital market may be sufficient to support relatively small early-stage firms, it cannot provide enough capital for a fast-growing business group like Nissan. The pyramidal structure is a solution that allows the

controlling shareholder to retain control in the event of large-scale external financing through the issuance of shares.[①] In countries where most firms are controlled by controlling shareholders, many studies have examined how individual firms are financed (Anderson et al., 2003; Croci et al., 2011; Keasey et al., 2015). Some studies focus on the issuance of shares and the motivation of controlling shareholders to maintain control (Cronqvist and Nilsson, 2005; Kim et al., 2019). However, few studies noted the relationship between the pyramid's expansion and external funding by issuing shares—a gap this study attempts to fill.

To the best of my knowledge, Masulis et al. (2020) is the only study that addresses a similar topic. Using comprehensive data from 44 countries: their study finds that firms are reluctant to issue equity because of concerns over the dilution of control; instead, they raise capital from outside by listing subsidiaries. However, because of a lack of data, Masulis et al. (2020) could not analyze how the listed subsidiaries were established and placed at the bottom of the pyramid. Thus, their study focuses only on how much the controlling shareholders' ownership would have been diluted if the subsidiaries existed as a business department of the parent company and the parent company raised capital through stock issuances. In addition, Masulis

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[①] When raising funds through issuing shares, new firms at the bottom of the pyramid can benefit the controlling shareholders. On the other hand, the benefits of the extended pyramid are unclear for the controlling shareholders or business groups seeking to raise funds through debt. The lower the position on the pyramid, the smaller the direct ownership of the controlling shareholder; the greater the gap between ownership and control, the higher the debt cost (Anderson and Reeb, 2003; Lin et al., 2011). Thus, this study focuses on expanding the pyramid and issuing shares.

et al. (2020) assume that subsidiaries were set up because of the need for external financing; however, this assumption cannot be verified. Through an event called *Ausgliederung*, a business unit operating as part of a public company is established as a separate, wholly-owned subsidiary at the bottom of the pyramid. This study delves deeper into areas that Masulis et al. (2020) failed to explore.

The key findings of this study are as follows: For a certain period after *Ausgliederung*, the pair of the parent company and new subsidiary ("the Pair") raises more funds through seasoned equity offerings (SEOs). The Pair's SEOs and the ratio to total assets are larger in absolute terms. The same results are observed in the entire sample and the matching sample analyses.

Second, the Pair also invests more for a certain period following *Ausgliederung*. This result is more pronounced when the Pair has high Tobin's q and is in an industry with significant investment and a high proportion of tangible assets compared to total assets. Thus, this study's hypothesis that firms needing investment use *Ausgliederung* to issue equity is supported. The result is also consistent with Almeida and Wolfenzon's (2006) prediction that firms requiring investment are located at the bottom of the pyramid.

Third, the Pair primarily increases share issuances and investments by its new subsidiary and not through its parent company. With other controlled conditions, there is no statistically significant difference in the size of SEOs between the parent company and other public firms, and no tendency to invest

more is observed. In contrast, although smaller than the parent company, the new subsidiary raises more capital through SEOs and invests more.

Fourth, firms that need investment but cannot raise funds because of concerns over dilution of control seem to have found a solution in the *Ausgliederung*. However, stock market investors do not react to such announcements positively because future profits of the new subsidiary are not entirely attributed to the parent company's shareholders. In most cases, existing shareholders of the parent firm must share future profits earned by the new subsidiary with the subsidiary's newcoming shareholders. Consequently, investors react negatively to public announcements, especially if a plan to increase investment or issue shares is directly stated in the registration.

The rest of this paper is organized as follows: Section 1.2. briefly reviews the legal nature of *Ausgliederung* and summarizes existing studies on a firm's stock issuance and pyramidal structures with controlling shareholders. In Section 1.3., the characteristics of the parent company and the Pair are discussed using descriptive statistics, and the research hypothesis is derived. Section 1.4. presents empirical findings and interprets their results. Finally, Section 1.5. summarizes the results and concludes.

1.2. Ausgliederung and literature review

1.2.1. *Ausgliederung*

A listed company in Korea can divest a division to create a wholly-owned subsidiary. Specified as *Physical Division* in the Commercial Act of Korea, *Ausgliederung* refers to the process by which a parent company transfers its assets to a new subsidiary and acquires all its shares in exchange. This system exists in Korea and countries with civil law systems in general. For example, Article L.236-22 of the Commercial Act in France is referred to as *l'apport partiel d'actif*. In Germany, it is referred to as *Ausgliederung* in Article 123(3) of the German Act on Corporate Reorganisations (*Umwandlungsgesetz*). The *Ausgliederung* system is stipulated in Japanese corporate law as a form of principle division. Although there is no exact term for this in US corporate law, *Ausgliederung* can be understood as follows in the US context: assume that the divestiture of a company can be divided into stage 1, during which the parent company acquires shares of the new subsidiary in exchange for transferring some of its assets, and stage 2, during which the parent company decides how to distribute those shares.[2] If it ends at step 1, it is considered *Ausgliederung* (Hwang, 2012). From the shareholders' perspective of widely held US firms, indirectly holding subsidiary shares has no benefits. However, there are benefits for the controlling shareholder of the pyramidal business group. The newly established subsidiary, through *Ausgliederung*, is located below the parent

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[2] Depending on how these stocks are distributed, divestitures are classified into a spin-off, split-off, and split-up.

company in the pyramid, allowing controlling shareholders to expand the size of assets they control easily.

In the United States, completing the divestiture during stage 1 without redistributing the new company's shares to shareholders of the existing company (*Ausgliederung*) is not common. However, it is not illegal (Soderquist and Eisenberg, 1977). Although the specifics vary from state to state, most state corporate laws permit a part of the business to be divided based on the board of directors' resolution. Moreover, there are no restrictions on how shares of the new firms are distributed. Therefore, *Ausgliederung* is rare in the United States, not because it is impossible but because it is not practical.

When *Ausgliederung* happens, shareholders of the parent company cannot sell the shares of the new subsidiary whenever they want unless the divestiture progresses to stage 2. For *Ausgliederung* to be preferred by shareholders, two conditions must be met. First, it must be challenging for the shareholders to sell the shares due to information asymmetry for the value they think the shares are worth, at least for a certain time. No shareholder would want to be deprived of such a choice if the shares can be sold at their fair price. Second, the fact that the new company and parent company belonging to the same business group should be considered valuable from the viewpoint of shareholders. However, if both conditions are met, shareholders face the following question: in the long run, would it not be better to continue the division within an existing company rather than setting up as a subsidiary at cost? Therefore, for *Ausgliederung* to be the optimal choice, the general advantages of corporate divestiture (increased efficiency through independent

decision-making, efficient use of resources, and enhancing expertise) must be evident while the two conditions listed above are met.

It is challenging to see *Ausgliederung* in the United States because these conditions are tough to fulfill simultaneously. In this context, it is understandable why most scholarly research has focused solely on a wholly-owned subsidiary as an instrument for overseas expansion (Makino and Neupert, 2000; Yiu and Makino, 2002). *Ausgliederung* cannot be optimal for shareholders under a widely-held ownership structure. The same applies to minority shareholders in firms with controlling shareholders. However, controlling shareholders have different positions. They prefer *Ausgliederung* to other divestiture methods because they can retain control while increasing the assets they control. There were 613 cases of *Ausgliederung* in Korea from 2000 to 2021 and only 195 cases of other divestiture methods (only one-third of all cases). Moreover, 117 of these 195 cases (or 60%) were related to the establishment of holding firms. However, this does not necessarily mean that the challenging conditions *Ausgliederung* might be preferable are met easily in Korea.[3] Rather, the fact that *Ausgliederung* has become the dominant

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[3] This condition is more challenging to meet in Korea. The reason is that if there is an existing controlling shareholder, the newly formed company remains within the corporate group despite the chosen spin-off method. As long as there is no controlling shareholder, if a spin-off is selected, the split parent company and the newly incorporated company would only be independent firms with the same shareholders. Alternatively, if there is a controlling shareholder and a spin-off is chosen, the controlling shareholder who controls the parent company would control the newly established company, and they would belong to the same corporate group. Therefore, if there is a controlling shareholder, regardless of the division method chosen, the benefits of belonging to a corporate group can still be enjoyed. Consequently, it is unlikely that *Ausgliederung* would be preferable to a spin-off for minority shareholders (Lee, 2020).

form of corporate divestiture in Korea suggests that controlling shareholders actively use it within a legal framework when allowed to expand the pyramid.

Although *Ausgliederung* was introduced in 1998 in Korea, there already existed a similar system: creating a new company through investment in kind is the same as *Ausgliederung* as it involves the setup of a particular business unit as a separate company and continued complete control of the firm. Though creditors' interests are handled differently (Song, 2012), there is still room for rights infringement from the standpoint of minority shareholders. Even though it is challenging to obtain data on Korean firms before 1998 to conduct an in-depth analysis, it is confirmed that many Korean firms created a wholly-owned subsidiary using this method even before the *Ausgliederung* system was introduced.[4] For example, from 1973 to 1989, at least five divisions that separated from Hyundai Engineering & Construction became new wholly-owned subsidiaries. A few academic studies have been conducted on this subject, especially in law (Kim, 1992). The relative advantage of *Ausgliederung* is that it permits the comprehensive transfer of the divided property to the new firm, does not grant appraisal rights, and does not require a court evaluation to determine that the asset is fairly valued, making it easier to divide. *Ausgliederung* is, thus, preferred by firms that wish to establish a wholly-owned subsidiary, which is why this study focuses on *Ausgliederung*. However, the history of business group expansion through subsidiaries goes back to before the introduction of the *Ausgliederung* system.

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[4] The Electronic Disclosure System of the Financial Supervisory Service allows searches of corporate disclosures only after 1999.

1.2.2. Literature Review

Theoretical studies have long suggested that controlling shareholders can make financing decisions for family-owned businesses while excluding minority investors (Harris and Raviv, 1988; Israel, 1991; Stulz, 1988). Nonetheless, there has been little research on the impact of a family's control retention motive on firms' financing in the same business group. Anderson et al. (2003) argue that the founder's family has a vested interest in the long-term survival and reputation of the company, and their existence alleviates the conflict of interest between shareholders and creditors. Hence, it is predicted that the higher the stake of the company founder's family, the lower the debt cost; thus, family firms will use more debt. In a study of 38 countries, Ellul (2008) finds that family firms tend to use large amounts of debt. This result arises because controlling shareholders with an insufficiently diversified investment portfolio seek to maintain control rather than reduce the idiosyncratic risks they face. In general, this result appears to be contrary to what one might expect from the perspective of a family-owned corporation operated by an entrenched manager who wishes to maintain its position.[5] However, given that the controlling shareholder determines the method of financing for a company belonging to a business group, and maintaining control is of paramount importance to them, it is not appropriate to attribute its financing to a manager. In addition, as the gap between ownership and

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[5] According to Berger et al. (1997), Garvey and Hanka (1999), and Jung et al. (1996), managers who want to maintain their positions use less debt.

control increases, concerns about private benefits increase; this raises banks' lending rates to firms (Lin et al., 2011). The result is a fall in corporate bond ratings, a rise in the yield spread, and increased debt costs (Boubakri and Ghouma, 2010). Nevertheless, the fact that family firms use more debt globally illustrates the importance of maintaining control.

Croci et al. (2011) find that European firms controlled by families prefer to raise funds through debt rather than stock issuance to avoid ownership dilution. Setia-Atmaja et al. (2009) confirm the same results for Australian firms, whereas King and Santor (2008) do so for Canadian firms. Schmid (2013) reaffirms that family businesses tend to use large amounts of debt globally but reported that this is not the case in Germany. The reason was that creditors would heavily monitor German firms if large amounts of funds were raised with debt due to Germany's strong creditor protection, making it challenging for the controlling shareholder family to exert complete control. In a study on European firms, Keasey et al. (2015) find that mature companies with little need for financing are less likely to dilute control than fast-growing firms. In addition, their study finds that even start-up family firms that require the most external funds are more reluctant to dilute their ownership than those without controlling shareholders. The same trend is seen in private Italian firms, as Gottardo and Moisello (2014) reported. According to Jain and Shao (2015), firms controlled by families rarely issue more stocks after listing, even in the United States.

The fact that the controlling shareholder's motivation to maintain control makes debt preferable to equity has been explored. Nevertheless, some family firms in emerging markets raise funds through stock issuance. It

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remains unknown why some firms issue shares at the risk of losing control and how they issue shares to maintain control. In Cronqvist and Nilsson (2005) and Wu et al. (2016), firms that are worried about losing control issue equity through private placement to maintain control. Kim et al. (2019) show that more than one-third of the equities issued by Korean public firms are issued to creditors in direct exchange for debt. This result implies that firms in emerging markets that were not experiencing financial challenges were reluctant to issue shares because of fears about dilution. Further, their study finds that more than half of the SEOs by Korean public firms were private placements. The fact that private placement was traditionally the last resort for firms that could not be financed indicates that many firms inevitably chose to issue equity (Chaplinsky and Haushalter, 2010; Brophy et al., 2009). Moreover, Barclay et al. (2007) note that private placement is primarily aimed at friendly investors who are less likely to oppose the current management, thus serving the interests of controlling shareholders.

Some studies above indeed addressed the issue of shares in business groups. However, a limitation is that they focused on firm-level analysis; therefore, they could not explain how the organization raises funds at the level of the entire group. For example, what are the characteristics of firms within the group that raise funds through stock issuance? In the process, how is a pyramid formed that allows firms to be controlled with a small stake? Prior studies of pyramid structures followed a landmark study by La Porta et al. (1999); the focus was on the tunneling of controlling shareholders (Bertrand et al., 2002; Morck et al., 2005). However, their findings were insufficient to explain the pervasive pyramid structure's presence fully. In other words, they

could not answer the following question: "Among the many ways of separating ownership and control, why is the pyramid chosen?"

Almeida and Wolfenzon (2006), in the first theoretical study to identify factors other than the private benefits of the controlling shareholders as a cause of the pyramid structure, begin with this question. The pyramid has no advantage over other simple methods of creating a control–ownership disparity without considering the need to raise capital. The means to increase the discrepancy while raising capital are limited. Almeida and Wolfenzon (2006) suggested dual-class share for this reason. When a company issues dual-class shares, the controlling shareholder can retain control even if the company raises significant amounts of capital. Therefore, if there are no additional factors to consider, a dual-class share may be an alternative to the pyramid structure. However, existing studies reveal that these are not alternatives and that pyramid structures are much more common worldwide than dual-class shares (La Porta et al., 1999; Bebchuck et al., 2019). In light of this, there may be other reasons firms choose a pyramidal structure over a dual-class share. Almeida and Wolfenzon (2006) find the answer by examining the firm's characteristics at the bottom of the pyramid. When starting a new business, a business group creates a new company at the bottom of the pyramid. Raising capital from the outside is challenging because of low profits that can be used as collateral and require much investment. A firm at the top of the pyramid can support this kind of new subsidiary through the internal capital market. Meanwhile, the dual-class share is a method of raising funds from outside the company. It will require high costs considering the characteristics of new business opportunities and, therefore, cannot be an

appropriate alternative. Subsequent studies empirically validated Almeida and Wolfenzon's (2006) explanation by answering many questions about the pyramid enterprise structure (Almeida et al., 2011; Bena and Ortiz-Molina, 2013).

In a broad sense, this study supports Almeida and Wolfenzon's (2006) theoretical predictions while simultaneously supplementing their study. According to their model, a business group that attempts to foster a business with challenges raising funds from outside will support it through retained earnings by placing the business at the bottom of the pyramid. While the model has been simplified for ease of analysis, it is reasonable to interpret "retained earnings" as referring to the overall support through the internal capital market. Similarly, follow-up studies also show that the pyramid provides capital for firms with challenges in external financing through dividends or loans (Gopalan et al., 2014; Buchuck et al., 2014). This context can also be used to understand a part of our study. New firms established through *Ausgliederung* in Korea are often unlisted; in this case, they cannot use public markets when issuing equity. Consequently, the newly established subsidiary can choose among only two types of SEOs: rights offerings and private placements. Among these, private placements for the controlling shareholder's family, affiliates, or executives can be regarded as internal capital markets. Considering that the parent firm holds 100% of the new subsidiary, rights offerings can also be seen as capital raising using the internal market. Therefore, besides the public offering case after going public in the future, only private placements to investors outside the business group do not rely on the internal capital market. In a broad sense, this is also

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influenced by the internal capital market because most investors who are affiliated with business groups are subject to allotment. Given these factors, my study can be considered an empirical investigation of Almeida and Wolfenzon's (2006) theory.

However, I also analyze the motivation of controlling shareholders to maintain control, which was not addressed by Almeida and Wolfenzon (2006). According to Almeida and Wolfenzon (2006), the business pyramid expands when it is challenging for business groups to raise external funds for the particular business units they wish to develop. My study of Korean firms finds that newly divided wholly-owned subsidiaries had lower profitability than average listed firms. However, since most firms implementing *Ausgliederung* are large and have a high market-to-book ratio, it is challenging to conclude that divestiture provides a significant advantage in raising funds externally. Considering that most firms that implement *Ausgliederung* are situated on the top or second floor of the pyramid structure, and the small gap between ownership and control, the motivation to increase capital while maintaining control is likely the primary reason for *Ausgliederung*. A more detailed discussion of this is presented in the following section.

1.3. Sample and hypothesis

This study analyzed all firms listed from 2000 to 2020, including the first case of *Ausgliederung*. In addition, the following firms were excluded

for research purposes: firms with capital impairment, missing or negative assets and sales, special purpose acquisition firms (SPACs), real estate investment trusts (REITs), and finance or insurance firms (firms belonging to 64–66 of the Korean Standard Industry Classification Code). A total of 2,716 firms and 32,804 firm-year observations were included in the sample, of which 225 were *Ausgliederung* firms.

All accounting variables were constructed using separate financial statements and not consolidated financial statements. Separate financial statements provide several advantages in researching *Ausgliederung* implementers because they are not affected by other affiliates. Consequently, even if a company is divided into two through *Ausgliederung*, the two firms' accounting variables can be combined to analyze financial statements from before the division. In addition, it is also advantageous to separately analyze the decision-making of the parent firm and the wholly-owned subsidiary after *Ausgliederung*.

In this study, the combination of the parent company and newly divided company after *Ausgliederung* is defined as a "Pair." Comparing this Pair with other listed firms or matching firms is the primary identification strategy. A company that implements *Ausgliederung* does not necessarily always become a Pair. This study focuses on new firms formed through *Ausgliederung*, so it is possible to track their activities for a certain time following the division. Since the purpose of *Ausgliederung* is to facilitate restructuring, many firms use it for purposes such as selling off business units (Song, 2012). In addition, firms sometimes use *Ausgliederung* to switch industries or relocate labor (Johnson, 1996). During this process, many

Ausgliederung firms disappear immediately after the split. In reality, the 225 *Ausgliederung* firms that make up the sample account for only 51% of all those divided via *Ausgliederung* during the same period. Pairs must meet the following criteria to be classified as Pairs: (1) a company establishes a wholly-owned subsidiary through *Ausgliederung*, (2) accounting information of the parent company and the new subsidiary in the year of the *Ausgliederung* and subsequent years must be publicly available, (3) neither the parent firm nor the new subsidiary is sold or liquidated by the end of the second year following the *Ausgliederung*. The second condition was created to exclude the case in which the newly formed firm was sold or merged immediately following the *Ausgliederung*. The third excludes cases where financially vulnerable firms used *Ausgliederung* as a survival strategy. Among the 32,804 values observed over the firm-year, 1,822 or 5.7% corresponded to Pairs.

[Insert Table 1.1]

Table 1.1 lists the definitions of each variable used in this study, and Table 1.2 presents descriptive statistics for the major variables. I examined the sample using the descriptive statistics in Table 1.2 and established the hypotheses. As mentioned in Section 1.2, I am interested in exploring financing and investment through SEOs by *Ausgliederung*-implementing firms. Specifically, it is predicted that there will be increases in SEOs and investments from the newly established subsidiary. During the entire sample period, only 25 firms were eventually listed. The average time for these firms to be listed was 58 months, and only seven were listed within three years of division. The data indicate that most firms formed through *Ausgliederung* are

not listed. Consequently, a direct comparison of newly-established subsidiaries via *Ausgliederung* with listed firms is inappropriate. However, there is also a limit to comparing newly established subsidiaries, formerly business units of listed firms that still exist as wholly-owned subsidiaries, with general unlisted firms. Furthermore, since the new subsidiary's size incorporated through *Ausgliederung* is large, finding an appropriate comparison target among unlisted firms is challenging. Panel C of Table 1.2 indicates the parent company's characteristics as of the year before *Ausgliederung*. The *RelSize* variable represents the size of the newly incorporated subsidiary compared with the parent company's total assets immediately after the split; it has an average value of 38.55%. In other words, approximately 27.8% (=35.85/135.85) of the firm's assets before the divestiture go to the newly formed subsidiary. However, most of the parent firms that operate divisions are large. Panel C of Table 1.2 shows that the average *Size* of the parent company in the year immediately preceding the divestiture was 5.87, which corresponds to the top 20% in the entire sample. Therefore, the average *Size* of newly established subsidiaries is similar to the median *Size* of all listed firms. For these reasons, this study first compares the Pair with all listed or matching firms. Then, I analyze the differences between the newly formed subsidiary and the parent company within the Pair.

[Insert Table 1.2]

Meanwhile, according to Panel C of Table 1.2, 89% of Pairs are business groups with other affiliates in Korea (see the *BG* variable). In addition, 90% of firms have controlling shareholders, and 46% have other listed firms within the business group. The average value of the *Layer*

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variable, representing the position in the business group pyramid, is only 1.58. Simultaneously, about two-thirds of firms practicing *Ausgliederung* are at the top of the pyramid. The controlling shareholder family's average cash flow in the *Ausgliederung*-implementing company is 29.88%, and the average of the voting rights is 39.55%. The average voting and cash flow rights difference is approximately 10%, which is significantly smaller than in previous studies on Korean business groups (Kim et al., 2004). Low voting rights and relatively high cash flow rights require controlling shareholders to spend considerable expenses on maintaining control of the company while raising capital via stock issuances. Therefore, this figure is crucial in establishing the research hypothesis. An SEO is required, but simultaneously, there is a concern regarding dilution of control as it creates an incentive to raise funds and invest through the new subsidiary after the *Ausgliederung*. Based on the above discussions, I formulated the following hypotheses:

Hypothesis 1: Pairs implementing *Ausgliederung* raise more capital through SEOs than other listed firms.

Hypothesis 2: Pairs implementing *Ausgliederung* invest more than other listed firms. When a company in need of investment implements *Ausgliederung*, the increase in investment is more significant.

Hypothesis 3: Increases in SEOs and investments are attributed to the newly established subsidiary, not the parent company. Such patterns are not observed if only the parent company is examined.

If these hypotheses are supported, it becomes necessary to analyze how investors in the capital market respond to such decisions by controlling shareholders. This is because creating a new wholly-owned subsidiary by paying expenses rather than using an already listed company is solely for the benefit of the controlling shareholders. Minority shareholders may accept the subsequent increase in investment positively, but if they react negatively, the controlling shareholder violates the rights of the remaining shareholders for their benefit. Following recent complaints from investors about the initial public offering (IPO) of the newly established subsidiary through *Ausgliederung*, it is believed that Korean investors are more concerned about infringements on future profits than an increase in investment. Accordingly, Hypothesis 4 is derived.

Hypothesis 4: Existing shareholders react negatively to the public announcement of *Ausgliederung* because future profits from the investment might be shared with the new shareholders of the newly incorporated subsidiary.

1.4. Empirical analysis

1.4.1. Correlation between Ausgliederung and the size or occurrence of SEOs within five years

This section tests the first hypothesis that firms that implemented *Ausgliederung* raise more capital through SEOs than other listed firms. In this context, a panel regression analysis is presented in Table 1.3. *After*, the independent variable, is an indicator variable with a value of 1 if five years have not passed since the *Ausgliederung*. In Panel A, the dependent variable is *SEOVol_TA*, representing the amount of capital raised through SEOs relative to total assets. In Panel B, *SEOVol*, a log value of (1+ volume of SEOs) and a variable representing the absolute size of the equity issuance, is used as a dependent variable. In Panel B of Table 1.2, a strong negative correlation exists between the number of SEOs, the company's total assets, and the number of business years. Consequently, all regression equations for Panels A and B of Table 1.3 use *Size*, the log value of total assets, and *FirmAge*, the log value of business years, as control variables.

$$
\begin{aligned}
SEOVol\_TA_{i,t}&\left(\text{or} \quad SEOVol_{i,t}\right) \\
&= \beta_0 + \ \beta_1 AfterCarve_{i,t} \ + \ \beta_2 Size_{i,t-1} \\
&\quad + \ \beta_3 FirmAge_{i,t-1} \ + \ Other \ Controls_{i,t-1} \\
&\quad + Year \ FE \ + \ Industry \ FE \ (or \ Firm \ FE) \ + \ \varepsilon_{i,t}
\end{aligned}
\tag{1}
$$

The other control variables include *Tangibility* (tangible assets divided by total assets), *Profitability* (operating income divided by total assets), *Cash_to_Assets* (cash and cash equivalent divided by total assets), *Leverage* (total liabilities divided by total assets), *CAPEX_to_PPE* (capital

expenditure divided by property, plants, and equipment), and *Market_to_Book* (market price per share divided by book value per share). All control variables are included in the regression as lagged values. Rajan and Zingales (1995) and Baker and Wurgler (2002) demonstrate the correlation between these variables and seasoned equity offerings. Equations (1)–(3) also control the fixed effects for year and industry. Equations (4) and (5) consider the fixed effects for year and firm, whereas Equation (6) considers the firm-year fixed effect. Double-clustered standard errors by firm and year are used for all regression analyses to control heterogeneity and autocorrelation. The only difference between Equations (2) and (3) and between Equations (4) and (5) lies in whether *CAPEX_to_PPE* and *Market_to_Book* are included. As all control variables are based on values at the end of the preceding year, *Market_to_Book* cannot be included in the regression during the listing year. As the *CAPEX_to_PPE* calculation requires information on tangible assets size in the prior year and the year before, the value cannot be calculated for firms that missed accounting information from two years ago. Because of this, some observations are left out when *Market_to_Book* and *CAPEX_to_PPE* are included in the regression equation. Hence, analysis results with and without both variables are reported.

[Insert Table 1.3]

In Panel A of Table 1.3, where the dependent variable is *SEOVol_TA*, the ratio of the amount of SEO to total assets, *AfterCarve*, a dummy variable

that gives the Pair that implemented *Ausgliederung* within five years a value of 1, shows a significant positive correlation with *SEOVol_TA*. A Pair that completed *Ausgliederung* within five years increases the amount of SEO by 1.116%p to 1.892%p per year compared to total assets, with other factors controlled and compared with other listed firms. Considering that the average of *SEOVol_TA* was 4.84%, it can be concluded that the *SEOVol_TA* was 23%–39% higher every year compared with other listed firms for Pair within five years of *Ausgliederung* implementation. This difference is statistically significant in most regression equations at the 1% level. Similarly, these results were also observed in Panel B, which uses *SEOVol*, a variable related to the absolute size of SEO, as a dependent variable. The only difference between Panels A and B is the dependent variable. According to Panel B, the correlation between *AfterCarve* and *SEOVol* is statistically significant for all equations at the 0.1% level. Panel C of Table 1.2 confirms that the firms that conducted *Ausgliederung* were significantly larger than the average listed company. Thus, considering the results of Panel A, which demonstrate the positive correlation between *SEOVol_TA* and *AfterCarve*, the correlation between the absolute amount of SEO and AfterCarve is predicted to be more significant. Such results were observed in Panel B.

The relationship between *SEOVol_TA* (or *SEOVol*) and other control variables is similar to previous studies. The regression coefficients of *Size*, *Market_to_Book*, *Profitability*, and *Leverage* are statistically significant for all equations containing the variables. *Size* and *Profitability* negatively correlated with *SEOVol_TA*, whereas *Leverage* and *Market_to_Book* displayed a positive correlation. This is consistent with the results of Baker

and Wurgler (2002), Loughran and Ritter (1995), and Lyandres et al. (2008). However, *Cash_to_Assets* and *SEOVol_TA* appear to have a positive correlation, seemingly contrary to previous studies that demonstrated that the need for cash is the primary motivation for financing through stock issuance (McLean, 2011). However, in Panel B, where *SEOVol* is used as a dependent variable, a negative correlation is observed between *Cash_to_Assets* and dependent variables, similar to previous studies. Further, although the results are not included in this study, the positive correlation between *Cash_to_Assets* and *SEOVol_TA* disappears except for companies with total assets in the bottom 20%. The results indicate that several factors influence the relationship between cash holdings and the amount of SEO in small firms.

According to Panel A in Table 1.2, of the total firm-year observations, only approximately 15% of them have raised capital through SEOs. In most firm-year observations, the value of *SEOVol_TA* (or *SEOVol*) is 0. On rare occasions, firms raise funds by issuing shares. Five hundred and thirty-three firms, or 19.62% of the total sample, have never raised capital through SEOs. In Table 1.4, the analysis is carried out with the dependent variable of whether or not funding was raised through SEO rather than the amount of the SEOs. The dependent variable, *SEO_Dummy*, has a value of 1 if the company raised capital through an SEO; otherwise, it is 0. Analyses were conducted using the same control variables used in the regression in Table 1.3. Equation (1) reports the analysis results using the pooled logit model. Equation (2) uses a panel logit model assuming a random effect, and Equation (3) uses a panel logit model considering a firm-fixed effect. Equations (4) and (5) use a panel logit model assuming a firm-fixed effect while considering the fixed effect

for a year. Equations (1)–(3) use a firm-clustered standard error. As shown in Equations (4) and (5), when combined with the fixed effects for firm and year, a nonlinear model, such as the logit model, causes incidental parameter issues, resulting in bias (Heckman, 1987; Greene, 2004). To solve this issue: regression coefficients and standard errors were calculated using the method proposed by Fernández-Val and Weidner (2016). Specifically, in Equation (4), the bias term was directly estimated using the formula derived by Li et al. (2003), and then an analytical correction that adjusts the estimator was used. In Equation (5), by sequentially removing observations for each year, a jackknife method was used to generate T samples and estimate the parameters for each sample.

[Insert Table 1.4]

The study reveals that the coefficient of *AfterCarve* displayed a significant statistical correlation at the 0.1% level with the *SEO_Dummy* variable in all equations. In addition, the rest of the control variables correlate with the dependent variable in the same direction as previous studies have reported. For Equations (3)–(5), which include a fixed effect for the firm, many firm-year observations are excluded because the proportion of firms that did not raise capital through SEOs was high.

In Table 1.5, I delved deeper into what characteristics Pair raised more funds through stock issuance after Ausgliederung was implemented. Since this paper assumes that the reason why a company establishes a wholly-owned subsidiary using Ausgliederung is the financing necessary for investment, it is essential to examine the characteristics of Pair. More

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specifically, I assume that Pair will raise more capital through stock issuances when the newly established subsidiary runs a less profitable business and requires a lot of investment. This hypothesis is consistent with Almeida & Wolfenzon's (2006) story. However, since the newly established subsidiary does not have past accounting data, Table 1.5 uses the average profitability of the industry to which the subsidiary belongs and average investment relative to the total asset as a proxy. Suppose the operating income relative to the total assets of the industry to which the new subsidiary belongs is within the top 30% of the whole industry. In that case, the *Sub_HighP_Ind* is 1, and a value of 0 is given in the remaining cases. Similarly, *Sub_LowP_Ind* is 1 only when operating income to total assets falls within the bottom 30% of all industries. For industries with moderate profitability, the values of both variables are zero. Two variables were similarly constructed using the ratio of investment to total assets. The *Sub_HighI_Ind* (*Sub_Low_Ind*) variable only has a value of 1 when a new subsidiary belongs to an industry with a top (lower) 30% investment relative to total assets.

Table 1.5 is a subsample analysis for only pairs that have implemented Ausgliederung. In this study, there are 225 pairs, and in the analysis of Tables 1.3 and 1.4, we only paid attention to the period five years after the division. Accordingly, Equations (1), (2), (4), (6), and (7) of this table analyze what characteristics the pair raised more funds by issuing shares within five years after Ausgliederung was implemented. On the other hand, in equations (3), (5), and (8), a specific period is not set. Therefore, pairs ten years after Ausgliederung are also included as samples in these equations.

Equations (1)-(3) consistently present the result that Pair issues more shares when the newly-established subsidiary belongs to an industry with low profitability, regardless of the length of the period and whether the industry fixed effect is included. Equations (4)-(5) also show that subsidiaries issue more shares when they belong to an industry with a high investment-to-total asset ratio. These results are consistent with this study's hypothesis and the theoretical prediction of Almeida and Wolfenzon (2006). However, Almeida and Wolfenzon (2006) predict that the profitability of the parent company used to make subsidiaries at the bottom of the pyramid is high, but such a result is not observed. (Equation (6)-Equation (8)) These results seem to be because, in their theory, the parent company is assumed to be the only company belonging to the same corporate group as the newly-established firm. Still, in reality, this is not the case.

Based on the analysis in Tables 1.3, 1.4, and 1.5, it can be concluded that *Ausgliederung*-implementing Pairs raised greater and more frequent capital through SEOs and, thus, had a greater amount of SEOs compared to the total assets during the five years after *Ausgliederung*. These results are statistically significant in any equation, regardless of changes in control variables or estimation methods.

1.4.2. Correlation between the Ausgliederung and investment within five years

This section tests Hypothesis 2 that a Pair implementing the *Ausgliederung* invests more than other public firms. A panel regression is conducted with the dependent variable *Investment_TA*, representing investment as a percentage of total assets. The results are presented in Table 1.6. Panel B of Table 1.2 confirms a strong negative correlation between *Investment_TA* and the firm's total assets (or the number of operating years). This is in line with previous studies examining the firm's life cycle theory, wherein the investment to total assets decreases gradually as the firm matures. Thus, all analyses include the *Size* variable representing the firm's size and the *FirmAge* variable representing the number of years the firm has been in operation. Furthermore, except in Equation (5), all analyses include *Market_to_Book*, which captures investment opportunities. In addition to these variables, Equations (2)–(5) include *OCF_TA*, which represents the operating cash flow to total assets, and *Sales Growth Rate*, which represents the growth rate of sales. *OCF_TA* is included in the regression to control the high correlation between operating cash flow and investment (Fazzari et al. 1988; Kaplan and Zingales 1997), while *Sales Growth Rate* accounts for changes in demand not captured by *Market_to_Book*. All equations include year-fixed effects and industry-fixed effects. Double clustered standard errors are used for firms and years to control heteroscedasticity and autocorrelation. The formula for this is below.

$$Investment\_TA_{i,t}$$

$$= \beta_0 + \beta_1 AfterCarve_{i,t} + \beta_2 Size_{i,t-1}$$

$$+ \beta_3 Market\_to\_Book_{i,t-1}$$

$$+ Other\ Controls_{i,t-1} + Year\ FE$$

$$+ Industry\ FE + \varepsilon_{i,t}$$

[Insert Table 1.6]

Equation (1) includes *Size*, *FirmAge*, *Market_to_Book*, and fixed effects for year and industry. In Equation (2), *OCF_TA* and *Sales Growth Rate* are included in addition to the control variables of Equation (1). In both equations, the correlation between *Investment_TA* and *AfterCarve* is statistically significant. Compared with other public firms, while controlling other factors, Pairs that conducted *Ausgliederung* within five years invest 1.274–1.567%p more relative to the total assets per year. With the average *Investment_TA* of 6.23%, it can be interpreted that Pairs within five years of *Ausgliederung* have approximately 20–25% higher *Investment_TA* per year than other listed firms.

Equations (3)–(5) test Hypothesis 2 that firms in need of additional investment implement *Ausgliederung* to raise the necessary funds and that the size of investment increase after *Ausgliederung* is larger. The analysis follows the following procedure. First, I create a dummy variable that assigns a value of 1 for firms motivated to increase investment and include it in the regression equation. Additionally, the interaction term between this dummy variable and the *AfterCarve* variable is included in the regression. This difference-in-

differences (DiD) method intends to prove that firms that needed to increase investment in advance substantially increased investment through *Ausgliederung*.

Previous studies show that corporate investment decisions are influenced by peer firm investment activities (Bustamante and Frésard, 2021). Based on these results, I assume that firms in industries with a high proportion of tangible assets and high investment compared with total assets have an incentive to increase investments. *High_T_Ind* assigns 1 to firms in an industry where the ratio of tangible assets to total assets in the previous year is within the top 30%, and 0 otherwise. Furthermore, *High_I_Ind* equals one if a firm is in an industry where the ratio of investments to total assets in the previous year falls within the top 30%, and 0 otherwise. Additionally, as Tobin's q captures business opportunities at the individual firm level, firms with high q will need to increase their investment. The *HighQ* variable has a value of 1 if a firm's Tobin's q is within the top 30% for the year, and 0 otherwise.

The results are as follows. The interaction terms *High_T_Ind* (or *High_I_Ind*) and *AfterCarve* display a statistically significant positive correlation at the 10% level. (Equations (3) and (4)) The interaction term coefficients of *HighQ* and *AfterCarve* are significant at the 5% level. Although not included here, these results remain the same even if the criteria for the *High_T_Ind*, *High_I_Ind*, and *HighQ* variables are changed. In Equations (3) and (4), the statistical significance of the coefficient values for the *AfterCarve* variable is weaker than that in Equations (1) and (2), suggesting that not all firms that have conducted *Ausgliederung* increase their

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investment to the same extent. In Equation (5), *Market_to_Book* is not used as a control variable because of the high correlation between Tobin's q and *Market_to_Book*. Consequently, the coefficient of *AfterCarve* increased significantly due to the correlation between the dependent variable Investment_TA and the variables *Market_to_Book* and *AfterCarve*.

1.4.3. Matched sample analysis: Correlation between Ausgliederung within five years and SEOs and investments

In this section, Hypotheses 1 and 2 are verified again using matched sample analysis, establishing a more evident relationship. Specifically, I construct a matched sample based on the variables affecting *Ausgliederung* implementation. Then, I use only the firms from this sample to demonstrate that those implementing *Ausgliederung* have more SEOs and investments. Considering that a firm's decision to divide is determined endogenously, it is not appropriate to interpret the results in Sections 4.1 and 4.2 as causal relationships. This section aims to complement this problem.

Matching samples are constructed according to the following procedure. First, I classify all firm-year observations by year. Then, the firm-year observations in the year before the *Ausgliederung* are assigned the value of 1, and the rest are given 0. In Panel B of Table 1.2, variables that had a significant correlation with *AfterCarve* at the 5% level are added, such as total assets (*Size*), profitability (*Profitability*), debt ratio (*Leverage*), number of

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years of operations (*FirmAge*), cash ratio (*Cash_to_Assets*), and market-to-book ratio (*Market_to_Book*). Then, logit regression analysis is performed to estimate the probability value of implementing *Ausgliederung* in the next year. A matched sample with the most similar propensity score is constructed with the estimated propensity score. Equations (1)–(3) match a firm with an *Ausgliederung*-implementing firm, and Equations (4)–(6) match up two firms with an *Ausgliederung*-implementing firm. The caliper method is used to avoid matching with firms whose characteristics are significantly different (caliper = 1%, with replacement).

A DiD analysis is performed using the matched sample from the previously discussed procedure. *Treat* is a dummy variable that assigns a value of 1 to firms implementing *Ausgliederung* and 0 to matched firms. *Post5yrs* is a dummy variable that gives a value of 1 within five years of *Ausgliederung* and applies to Pair and matched firms. As an example, suppose Firm A conducted *Ausgliederung* in 2014. For all firm-year observations of Firm A, the *Treat* is 1. However, for observations corresponding to Firm A, the *Post5yrs* variable value is 1 for all firm-year observations from 2015 to 2019, five years after the division. Once Firm B becomes Firm A's matched firm, Firm B's observations have a *Treat* value of 0. However, Firm B's 2015–2019 firm-year observations are given 1 in *Post5yrs*. Therefore, the interaction term of *Treat* and *Post5yrs* is the same as the *AfterCarve* variable, which continued to be used as the key explanatory variable in this study. Panel A of Table 1.7 is the result of regression analysis performed with *SEOVol_TA* as the dependent variable, while Panel B uses *Investment_TA* as the dependent variable. Both use *Treat* and *Post5yrs* and the interaction term of the two

variables as explanatory variables. All equations consider the fixed effects for industry and year, and double-clustered standard errors by firm and year are used. This can be expressed as the following formula.

$$
\begin{aligned}
SEOVol\_TA_{i,t} \ &(or \ Investment_{TA_{i,t}}) \\
&= \beta_0 + \ \beta_1 Treat_{i,t} \ + \ \beta_2 Post5yrs_{i,t} \\
&+ \ \beta_3 (Treat_{i,t} \times Post5yrs_{i,t}) \\
&+ \ Other \ Controls_{i,t-1} \ + Year \ FE \\
&+ \ Industry \ FE \ + \ \varepsilon_{i,t}
\end{aligned}
$$

[Insert Table 1.7]

Panel A of Table 1.7 reports the analysis results using *SEOVol_TA* as a dependent variable. First, Equations (1) and (4), which use only the interaction term of *Treat* and *Post5yrs* for analysis without DiD, attempt to test whether the results of Panel A in Table 1.3 are repeated under this sub-sample. Even under this sub-sample, the interaction term of *Treat* and *Post5yrs*, the same as the *AfterCarve* variable, shows a significant positive correlation at the 1% level. Next, in Equations (2), (3), (5), and (6), where the DiD analysis is performed by adding *Treat* and *Post5yrs*, the interaction term shows a statistically significant positive correlation with the dependent variable. However, the coefficients of *Treat* and *Post5yrs* are not statistically significant in any equation. This result indicates that there is no significant difference in the size of the SEOs between the *Ausgliederung* and matched

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firms before *Ausgliederung*; however, after experiencing the *Ausgliederung*, there is a considerable difference in the amount of SEOs between the two. This result is consistent with Hypothesis 1 that controlling shareholders who lower their concerns about the dilution of control by implementing *Ausgliederung* are more likely to issue equity to raise capital.

Panel B of Table 1.7 reports the analysis results using *Investment_TA* as a dependent variable. Using the same methodology as in Panel A, Equations (1) and (4), which used the interaction term of *Treat* and *Post5yrs* for analysis without DiD, are designed to test whether the results of Equations (1) and (2) in Table 1.6 are repeated under this sub-sample. The coefficient of the interaction term of *Treat* and *Post5yrs*, which is the same as the *AfterCarve* variable, had a statistically significant positive value. In addition, in Equations (2), (3), (5), and (6), where DiD analysis is performed by adding *Treat* and *Post5yrs*, the interaction term showed a statistically significant positive correlation with the dependent variable. However, even in Panel B, the coefficients of *Treat* and *Post5yrs* are not statistically significant in any equation. These results support Hypothesis 2 because they show that the Pair can invest more than the matched firms only after experiencing *Ausgliederung*.

1.4.4. SEOs and investment of the *Ausgliederung*-implementing parent firm

The previous analysis showed that the Pair makes more investments and raises capital through stock issues after *Ausgliederung*. However, to support the hypotheses of this study, the SEOs and investments must be caused by the newly established subsidiary, and not the parent company. Table 1.8 confirms this. About the descriptive statistics in Chapter 3, this study mentioned the reasons for using separate rather than consolidated financial statements. As separate financial statements do not reflect the information of related subsidiaries, accounting variables of the parent firm and the new subsidiary are combined to create accounting variables for the Pair. Conversely, variables in the separate financial statements of the parent firm can be used instead of accounting variables of the Pair to exclude the impact of the newly incorporated subsidiary.

[Insert Table 1.8]

Using these advantages, Table 1.8 tests whether the parent firm has more SEOs or investments after *Ausgliederung*. *SEOVol_TA_O* refers to the amount of SEO compared to the total assets of public firms calculated using separate financial statements. So, unless a firm is an Ausgliederung-implementing parent firm, *SEOVol_TA_O* is equal to *SEOVol_TA*. However, suppose it is an Ausgliederung-implementing parent firm; then, there is a difference between SEOVol_TA and SEOVol_TA_O because SEOVol_TA_O is calculated using its own SEO amount and total assets rather than the Pair level. Similarly, *Investment_TA_O* is the amount of investment compared with the total assets of the public firms. Panel A examines the correlation between the parent firms' volume of SEOs relative to the total assets and *Ausgliederung* within five years based on

SEOVol_TA_O as the dependent variable. The control variable, *Size*, is also replaced by *Size_O*, a variable obtained only for the parent firm. The remaining control variables, including *Tangibility, Profitability, Cash_to_Assets, Leverage,* and *CAPEX_to_PPE*, are also newly obtained from the parent firm unit. However, since the Pair's *FirmAge* is obtained based on an *Ausgliederung*-implementing parent firm, it remains the same. Because most new subsidiaries formed out of *Ausgliederung* are unlisted firms, the *Market_to_Book* uses the parent firm's value in the previous analyses. Therefore, *Market_to_Book* remains the same in this table. The year fixed effect is considered in all equations, while the industry fixed effect is added in Equations (1) and (2), and the firm fixed effect is added in Equations (3) and (4). In Equations (1) and (3), only *Size_O* and *FirmAge* are used as control variables, while all control variables are used in Equations (2) and (4). Equation (5) is the result of repeating the analysis of Equation (4) without considering firms with total assets below the median value, reflecting the fact that the size of the divided parent firm is significantly greater than that of the average public firm. Double clustered standard errors by firm and year are used for all regression analyses to control heteroscedasticity and autocorrelation.

The analysis results reveal that the statistical significance of the *AfterCarve* coefficient is weaker than that in Table 1.3. Considering the fixed effect for a firm, the correlation between *AfterCarve* and *SEOVol_TA_O* is not statistically significant. On the other hand, a statistically significant positive correlation is observed at the 10% level with industry fixed effect. Still, both the size of the coefficient and the t-value are smaller than those in

Table 1.3, which uses a Pair. Moreover, when firms with total assets less than the median value are excluded, the coefficient of *AfterCarve* loses statistical significance even in the model using the industry fixed effect.

In Panel B, *Investment_TA_O* is used as a dependent variable to analyze the correlation between investments and whether *Ausgliederung* is implemented. This analysis is conducted in the same way as in Panel A. The results reveal that in Equations (1)–(4), the correlation between *AfterCarve* and *Investment_TA_O* is not statistically significant. Instead, in Equations (2) and (4), a weak negative correlation is found, although it is not statistically significant at the 10% level. In addition, by applying Equations (3)–(5) in Table 1.6, which examine the changes in investment before and after the *Ausgliederung* of the Pairs considered to require investment, the analysis is performed again using only the parent firm. In any equation, no significant positive correlation is found in AfterCarve or the interaction term of High_T_Ind (or High_I_Ind or HighQ) and AfterCarve. Instead, when *HighQ* and the interaction term of *HighQ* and *AfterCarve* are used as explanatory variables, the coefficient of *AfterCarve* had a significantly negative value at the 10% level. These results confirm that a newly incorporated subsidiary leads to an increase in SEOs and investments.

[Insert Table 1.9]

Table 1.9 directly compares SEO and investment amount between the *Ausgliederung*-implementing parent firm and the new wholly-owned subsidiary for a certain period after the *Ausgliederung*. The table includes only the parent firm and the new subsidiary, excluding all other firms.

D_NewFirm is a dummy variable, that is, assigned a value of 1 when a firm is a wholly-owned subsidiary created through *Ausgliederung* and 0 when it is a parent firm. *Size_separate* is calculated similarly to *Size* but is determined separately for the parent firm and subsidiary. *SEOVol5_separate* represents the accumulated amount of SEOs within five years of *Ausgliederung* and is calculated for the parent and new firms (in units of KRW 1 billion), respectively. *SEOVol5_TA_separate* is the value obtained by dividing the cumulative amount of SEOs within five years of *Ausgliederung* by the total assets at the time of *Ausgliederung*; it is also defined for both the parent firm and new subsidiary. *SEOVol3_separate* and *SEOVol3_TA_separate* are also determined in the same manner as the previous two variables, except that the reference period is three years. Panel A, wherein *SEOVol5_separate* and *SEOVol3_separate* are used as dependent variables, shows the difference in the cumulative amount of SEOs between the parent and new firms. In Panel B, wherein *SEOVol5_TA_separate* and *SEOVol3_TA_separate* are the dependent variables, the difference in the cumulative amount of SEOs relative to the total assets between the *Ausgliederung*-implementing parent firm and the new subsidiary is analyzed. Panel C shows the difference in investment size between the *Ausgliederung*-implementing parent firm and the newly established subsidiary. *Inv5_separate* and *Inv3_ separate* represent the cumulative investment amount for five and three years, respectively, after *Ausgliederung* (in KRW billions). *Inv5_TA_separate* and *Inv3_TA_separate* are the values of the cumulative investment amounts within five and three years, respectively, of the Ausgliederung, divided by the total assets at the time of division.

Equation (1) in Panel A uses only *D_NewFirm* as a control variable without using any other control variables. Therefore, the intercept represents the cumulative amount of SEOs of the *Ausgliederung*-implementing parent firm within three years after the Ausgliederung. Accordingly, the coefficient of *D_NewFirm* can be viewed as the difference in the cumulative amount of SEOs for three years after the *Ausgliederung* of the newly established subsidiary from its parent firm. In other words, for three years after the *Ausgliederung*, through SEO, the parent firm and new subsidiary raise an average of 225.95 and 433.68 billion KRW, respectively. However, the difference between the two is not statistically significant. Nevertheless, as shown in Panel C of Table 1.2, when the assets of the newly established subsidiary, which are 35.85% of the parent firm at the time of the *Ausgliederung*, are controlled, the newly established subsidiary significantly increases the capital through SEO for three years after the *Ausgliederung* (Equation (2)). Adding control variables does not change this result (Equation (3)). Equations (4) and (5) illustrate the results of the same type of analysis as in Equations (2) and (3), with only the dependent variable changed to *SEOVol5_separate*. Furthermore, the cumulative amount of SEOs over the five years following the Ausgliederung is higher for the new subsidiary than for the parent firm.

The accumulated amount of SEO is not a dependent variable in Panel B. Instead, the *SEOVol5_TA_separate* and *SEOVol3_TA_separate* variables obtained from dividing the cumulative amounts in three or five years by the total assets at the time of *Ausgliederung*, are used as dependent variables. According to Panel B, the new subsidiary has significantly larger SEOs than

its parent firm. The results are consistent with Hypothesis 3. In Panel C, the cumulative investment amount relative to the total assets at the time of the *Ausgliederung* for a certain period after the Ausgliederung is compared between the new subsidiary and the parent firm. The cumulative investment amount compared with the total assets of the subsidiary firm is significantly higher than that of the parent firm. This result also follows Hypothesis 3, that the increase in investment after *Ausgliederung* is led by subsidiaries.

1.4.5. Effect of publicly announcing *Ausgliederung* according to the purpose of division

It is difficult to predict investors' reactions to *Ausgliederung*, which may lead to increased capital raising through SEOs and investment in the future. In Korea, several firms that converted their high-potential business units into wholly-owned subsidiaries through *Ausgliederung* and subsequently listed (or were in the process of listing) these subsidiaries have faced disputes. Despite these firms' assurances that large-scale investments will be possible through financing in the future, investors reacted negatively. For instance, NHN's stock price fell by 9.7% in one day after announcing *Ausgliederung* for its cloud division in December 2021. Based on this recent experience, it is easy to assume that investors will react negatively; however, existing studies suggest otherwise. For example, studies on the market reaction to announcing *Ausgliederung* in Korea report that no significant results are found in the post-disclosure period (Kang and Jinn 2012; Kim and

Soo 2013), or rather, a statistically significant positive abnormal returns are found (Park and Jeon, 2008).

There is a problem as existing Korean studies do not clearly distinguish the motives for implementing *Ausgliederung*. Ausgliederung can be used to improve efficiency through restructuring (John and Ofek 1995; Desai and Jain 1999; so, the market will respond positively to the announcement of such an *Ausgliederung*. On the other hand, market participants will react negatively to the disclosure of *Ausgliederung* of interest in this study, which is likely to be used as a means of finance and investment (Hypothesis 4).

While the above hypothesis sounds straightforward, it does not align with the existing studies conducted in the United States, where no controlling shareholders exist. It is reported that investors in the United States respond positively to announcements of equity carve-outs, similar to listing subsidiaries after *Ausgliederung* (Schipper and Smith 1986, Slovin et al. 1996; Vijh 1999). It is possible to apply the interpretation of such studies to the Korean *Ausgliederung* as it stands. For example, there is a logic that a carve-out is valuable to shareholders of a parent firm because it allows the parent firm to focus more on its flagship business while still maintaining control over the affiliates (Vijh 1999) or because share issuances, that are, perceived negatively by investors can be handed over to subsidiaries (Schipper and Smith 1986). The same logic can be applied to the Korean firms that establish new subsidiaries and raise funds through them. Therefore, if investors react negatively to the announcements of *Ausgliederung*, which is likely to increase the amount of SEOs and investment, it may be due to factors that do not exist

in the U.S. market but exist in Korea. This study proposes that the main factor is the existence of controlling shareholders who can make firm decisions against the preferences of minority shareholders.

It is difficult to use the sample of this study, which was analyzed using only some of the *Ausgliederung*, in this section as it is. This study only includes firms whose parent and subsidiary firms did not dissolve until the end of the second year after division. However, it may not be appropriate for this section to study investors' responses to the announcement because such dissolution occurs after the *Ausgliederung* announcement. Additionally, since only short-term stock price data are needed after the *Ausgliederung*, it is not necessary to exclude firms that divided after 2020. This section thus examines the responses to announcements on Ausgliederung for all 612 *Ausgliederung* cases from 2000 to 2021.

[Insert Table 1.10]

First, responses to announcements on the entire *Ausgliederung* are investigated without classifying the *Ausgliederung* according to the purpose of division. On the announcement day, no significant abnormal returns are observed; however, from the first to the third day after the announcement, a significant negative abnormal return is observed each day. This results in a significantly negative cumulative abnormal return (-1 to +1) for two days following the announcement (see Figure 1.1). Negative cumulative abnormal returns increase until the day +9 and remain at a similar level until the day +20.

[Insert Figure1.1]

Following my earlier hypothesis, this study finds that negative abnormal returns and cumulative abnormal returns would be primarily driven by firms that implement *Ausgliederung* for future finance and investment. As a verification, the purpose of the *Ausgliederung* described in the prospectus is categorized into four types: 1) finance and investment through new subsidiaries, 2) rehabilitation of corporations, 3) establishment of holding company, and 4) improving efficiency through division. The results are presented in Panel A of Table 1.11. As the firms themselves are responsible for drafting and announcing the division's purpose, a researcher's judgment is required to classify *Ausgliederung*'s purpose. In this study, only firms that explicitly stated their plan for financing or increasing investment through new subsidiaries are categorized as "finance and investment through new subsidiaries." In contrast, firms that vaguely described their goals, such as "increasing investment efficiency," are classified as "improving efficiency through division." In the end, 168 cases, or 27% of the total *Ausgliederung* cases, are classified as "finance and investment through new subsidiaries."

[Insert Table 1.11]

Subsequently, Panels B and C of Table 1.11 test whether investors react negatively to the announcements on *Ausgliederung* classified as "finance and investment through new subsidiaries." Panel B presents the results of the abnormal returns on the day of the announcement and cumulative abnormal returns two to three days after the announcement. The abnormal and cumulative abnormal returns of the disclosures of the *Ausgliederung*, which are classified to the other three division purposes, are not statistically significant. Meanwhile, the abnormal and cumulative

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abnormal returns of those with the division purpose "finance and investment through new subsidiaries" are all statistically significant at the 1% level. These results are maintained while other factors influencing the announcement effect are controlled. The control variables used in Panel C of Table 1.10 are as follows: for the parent firm implementing *Ausgliederung*, *Size, Leverage, Cash-to-Asset,* and *OCF_TA, ROA*; for the subsidiary, *ROA* and *Tangibility*.

Finally, regarding the remaining firms whose purpose of the division is not categorized as "finance and investment through new subsidiaries," Panel D of Table 1.11 examines the relationship between the parent firm's cash holding level and the announcement effect. Significant positive abnormal and cumulative abnormal returns are observed in the *Ausgliederung* announcement of the parent firm, whose cash holding ratio is within the bottom 30%. This finding suggests that even when firms announce the same *Ausgliederung*, investors react differently depending on its purpose. Moreover, Panels B and C of Table 1.11 show that even before the IPO of a new subsidiary incorporated by the *Ausgliederung* attracted investors' attention, investors already reacted negatively to the possibility of sharing future profits that should have been theirs with new investors of the subsidiary.

1.5. Conclusion

Recently, the Korean capital market has given a lot of attention to a public firm setting up a wholly-owned subsidiary through an *Ausgliederung* of its primary business division and then re-listing the subsidiary on the stock market. Most of the discussions related to this issue focus on how to protect minority shareholders. The protection of shareholder rights is an important topic. Still, little attention is paid to the motivation of firms to take such decisions even when doing so infringes the rights of minority shareholders. Several studies suggest that controlling shareholders' concern about the dilution may lead to such decisions (Lee 2020); however, many questions remain unanswered because this topic has only been examined through case studies. Is raising capital via the issuance of shares by wholly-owned subsidiaries a new phenomenon? What amount of capital is raised in this way, and how many firms have used this method? Are the funds raised through wholly-owned subsidiaries used for investment, as some recently *Ausgliederung* firms claim?

This study examines such questions, and the findings are as follows. Establishing a wholly-owned subsidiary through *Ausgliederung* and raising funds by listing the subsidiary immediately is a relatively new approach. Nevertheless, business groups have been raising funds through SEOs in newly established subsidiaries instead of going public. Over the five years following the *Ausgliederung*, the Pair of a parent firm and a wholly-owned subsidiary raised more capital through SEOs than other public firms. This study reveals that the Pair's capital raised through SEOs within five years of the *Ausgliederung* accounted for 15.4% of all paid-in capital increases of all listed firms. Additionally, 58.86% of Pair's SEO is made by the newly

established subsidiaries. This is a surprisingly high figure given that there have been only 583 instances of listed firms implementing *Ausgliederung* between 2000 and 2020, the period analyzed in this study, more than half of which are liquidated or sold within three years. Furthermore, newly incorporated subsidiaries issue many shares and make higher investments, indicating that newly incorporated firms play a vital role in expanding pyramidal business groups.

More than half of the *Ausgliederung* firms are at the top of the pyramid within the business group. Furthermore, the average voting rights of such firms' controlling shareholders are less than 40%, whereas the average cash flow rights are about 30%. Considering these facts and the Pair's large stock issuances and investment together, it can be inferred that if the parent firm had not set up a new subsidiary and directly raised capital through SEOs, the controlling shareholders would have needed to hold considerable cash to maintain control. This problem can be easily solved by creating a wholly-owned subsidiary, as Yoshisuke Aikawa highlighted more than 100 years ago. This study posits that this is one of the primary motivations for pyramid expansion.

This study illustrates that private firms, which have received relatively little attention because of a lack of data, play an essential role in raising capital and investing for business groups. In most countries, the information available on unlisted firms is limited, making it difficult to conduct an in-depth study. However, existing studies have suggested that private firms constitute a large part of the business group and play a crucial role in helping the controlling shareholder maintain control (Morck and Yeung 2003; He et

al. 2013). [6] Because of the easy access to information on unlisted corporations in Korea, I can comprehensively analyze capital raising through SEOs and the expansion of business groups. Moreover, previous studies report that most Korean firms that need investment raise capital by a method other than stock issuance (Choi and Suh, 2017), and financially distressed firms tend to engage in stock issuances (Kim et al., 2019). Still, I supplement these by showing that unlisted affiliates' capital raised through SEOs accounts for a significant portion of the corporate group's issuance of shares.

The issuance of shares by newly incorporated firms through *Ausgliederung* helps increase investment and avert dilution of control by controlling shareholders. Unfortunately, based on an analysis of the announcement's return, the rights of minority shareholders are also infringed in this process. The recent discussion on investor protection has focused on the IPO of subsidiaries set up through *Ausgliederung*. However, little attention has been paid to investor protection when a newly incorporated subsidiary issues shares, although existing shareholders of the parent company must share the future profits of the carved division with other new shareholders. Accordingly, even when a wholly-owned subsidiary established through *Ausgliederung* raises funds through SEOs, investor protection measures being discussed under the premise of going public via IPO must be applied.

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[6] In fact, in the case of Hyundai Motor, the second largest corporate group in Korea, 26.2% of its total assets (80.37 trillion KRW) were owned by its unlisted subsidiaries as of 2020. In the case of SK, the third largest corporate group, 49.3% (79.05 trillion KRW) of assets were owned by its unlisted affiliates.

Chapter 2. Aligned Incentives of SPAC Sponsors

: Evidence from Korean SPACs

2.1. Introduction

"The misaligned incentives for SPAC sponsors, who are given a "promote," or 20% stake, in the public company following the merger with a private company, gives them an all-but-guaranteed profit, putting retail investors at increased risk and allowing companies with significant weaknesses to bypass the disclosures required of a traditional IPO."

Senator. Elizabeth Warren, May 2022[7]

Special Purpose Acquisition Company (hereafter, SPAC), as a blank check company, goes public through an IPO for the sole purpose of raising funds to purchase private companies. Since 2020, the number and total proceeds of SPAC IPOs in the U.S. have dramatically increased, and SPACs receive both a lot of attention and criticism from academics and policymakers as well as investors. SPACs are always blamed for the poor performance of SPAC targets after target firms become public. Commonly, academia and

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[7] https://www.warren.senate.gov/imo/media/doc/SPACS.pdf

policymakers attribute the poor performance of SPAC targets following listing to misaligned incentive structures of SPAC sponsors, which induces SPAC sponsors to select bad acquisitions [8] . To strengthen investor protections and responsibilities of SPAC sponsors, SEC proposed new rules on more detailed and stricter disclosures on SPAC IPOs and target firms in March 2022. Also, Senator Warren is proposing the "SPAC Accountability Act of 2022" to codify the proposed new rules by SEC into laws.

In this paper, we want to investigate how aligned incentives of SPAC sponsors influence outcomes of SPAC target firms. To address this question, we exploit data of Korean SPACs from 2009 to 2021. The system of Korean SPAC was introduced in December 2009 as a modified version of the U.S. SPAC system, and the first SPAC occurred in 2010 in Asian countries. Since then, Korea has 217 SPACs until 2021.

We have two main advantages of using Korean data in this study. First, Korean SPACs have unique institutions on SPAC sponsors. Promote shares of sponsors in Korea SPACs are much less discounted than in the U.S. SPACs, SPAC sponsors in Korea have more alignment with SPAC public investors than in the U.S. Also, according to regulations on SPAC in Korea, SPAC sponsors should be composed of at least one securities firm which meets certain qualifications. This regulation enhances the specialty and the accountability of SPAC sponsors. Thus, SPAC sponsors in Korea are more

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[8] Kolb, and Tykvová (2016), and Dimitrova (2017); U.S. House Committee on Financial Services Virtual Hearing - Going Public: SPACs, Direct Listings, Public Offerings, and the Need for Investor Protections https://financialservices.house.gov/events/eventsingle.aspx?EventID=407753

aligned with public investors and take the responsibility of distinguishing the good type of target firms from the bad type of firms to maximize their profits. Second, because private firms in Korea are required to be audited by external auditors, financial information for private firms is disclosed. Thus, the Korean financial market provides an empirical setting for us to use pre-listing firm characteristics and to compare pre-listing and post-listing firm characteristics.

First, we want to examine what determines the choices between a SPAC merger and a traditional IPO for private firms when going public. Private firms can choose a SPAC merger as a viable alternative to a conventional IPO[9]. To be listed on stock exchanges via traditional IPOs in Korea, private firms must meet listing requirements of having a minimum sales or EBIT, etc., before applying. While Kim et al. (2020) and Park (2022) conduct similar tests with us using Korea SPAC mergers and traditional data, they overlook the requirements of listing such EBIT and sales in their analyses. In our tests, we consider listing requirements as predeterminants on regression models. Kolb and Tykvová (2016) explore determinants of SPAC acquisitions over traditional IPOs, but they use post-listing firm characteristics as predeterminants in their regression models due to the unavailability of pre-listing financial information.

We find that firm characteristics differ systematically across SPAC merged and IPO firms. Firms with smaller size, less sales, or lower earnings before interest and taxes (EBIT) are more likely to choose SPAC mergers

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[9] Since due diligence was adapted to a reverse merger in 2011, the number of listings through a reverse merger has sharply been reduced to zero.

than traditional IPOs. Our findings suggest that when firms have a higher level of asymmetric information and are more financially constrained, firms are more likely to use SPAC rather than IPO. Thus, SPAC can help private firms access the public market by reducing the asymmetric information of those firms.

Second, we compare changes in pre-listing to post-listing financing activities of SPAC targets to those of IPO firms. Using the difference-in-differences analysis, we find that SPAC targets raise less financing than IPO firms when both SPAC targets and IPO firms are unlisted, but the increase in financing activities by SPAC targets is larger than by traditional IPO firms. SPAC targets raise funds through equity issuances such as right offerings or private placements. Investors in private placements are alliance partners or accredited investors. Since private firms which go public through a SPAC merger tend to be much smaller and are not likely to meet requirement listings, they have higher asymmetric information than traditional IPO firms. Because information asymmetry increases the cost of raising external capital, private firms can be financially constrained before going public. However, by relieving the information asymmetry of SPAC targets, the De-SPAC process leads to more external financing by SPAC targets after they access the public market.

Lastly, we test changes in investments before and after the listing of SPAC targets. Proceeds from SPAC IPOs are injected into SPAC targets in the process of SPAC acquisitions, or SPAC targets raise additional capital after they become public. SPAC targets can increase their capital expenditure or R&D expenses with proceeds. Through the difference-in-differences

method, we find that the incremental investment for SPAC targets is much higher than that of IPO firms before and after listings. Fazzari et al. (1988) show that investment by financially constrained firms is more sensitive to cash flow. Our findings suggest that proceeds of SPAC IPOs or additional financing induce SPAC targets to increase more investment activities because SPAC targets are financially constrained before going public. Additionally, by exploiting the triple-differences approach, we find that incremental investments are more pronounced in SPAC targets with high investment opportunities. Thus, these findings imply that incremental investments in SPAC targets are not overinvestments.

As a robustness test, we perform the placebo test to support our evidence in financing and investment activities. First, we match SPAC targets with private firms that neither are targeted by SPACs nor go public via IPOs. To construct a sample of matched firms comparable with SPAC targets, we exploit the propensity matching score approach. Then, we repeat to conduct the difference-in-differences test over the matched private firms and traditional IPO firms. The placebo test shows that the matched sample of firms does not increase financing and investment following the quasi-listing year. Therefore, our results imply that SPACs target private firms which need financing and investments and help private firms finance and invest by taking them public.

One can argue that different firm characteristics between SPAC targets and IPO firms drive our results. To address this concern, we match SPAC targets and IPO firms with private firms, respectively. Then, we subtract investment and financing activities of SPAC targets from matched

private firms, and subtract ones of IPO firms from matched private firms. By using the differences in the SPAC group and the IPO group as dependent variables, we conduct the difference-in-differences approach again. Again, we find that the results are consistent with our main results.

SPACs can serve as a screening function between good and bad firms. SPAC sponsors consist of securities firms, private equity firms, asset management firms, or professional financiers. Thus, SPAC sponsors can select a good type of firm and help private firms with asymmetric information and financial constraints to be listed on a stock market.

Additionally, SPAC sponsors have a strong incentive to search for a good type of target due to reputation effect and incentive alignment. First, SPACs try to retain a good reputation from investors. Korean SPACs are required to have at least one securities firm as a sponsor to protect SPAC public investors. Then, the names of SPACs are organized by the names of securities firms and a series number. SPAC investors can easily track the performance and outcomes of SPACs.

Second, SPAC sponsors maximize their profits by completing to merge with good firms. Basically, SPAC sponsors almost do not get paid. When SPAC sponsors establish SPACs, they participate in private placements in common shares at a discounted price, similar to promote shares and convertible bonds. An offer price of common shares is KRW 1,000, which is a 50% discounted price relative to public offerings on SPAC IPOs. Also, sponsors with convertible bonds can convert bonds to equity of merged firms where the conversion price is KRW 1,000 per share. While proceeds from the public offering of SPAC IPOs are deposited into trust accounts, the proceeds

from the private placement are used for operating expenses for SPACs. If SPACs fail to finish mergers with targets within three years, the investment of SPAC sponsors becomes irretrievable. Therefore, SPAC sponsors have a strong incentive to search for good firms within a limited period.

Our study is similar to Lee et al. (2019), who compare pre-listing and post-listing performance for Chinese reverse mergers to traditional IPOs because accounting information for private firms is available in China. Both reverse merger and SPAC merger are similar in providing alternative ways of going public. However, our paper obviously differs from Lee et al. (2019) because reverse and SPAC mergers have distinct characteristics. Public firms in a reverse merger are (almost) shell companies that do not carry professions or cash to inject private firms. On the other hand, SPACs are backed by sponsors and professional managers. Therefore, SPAC sponsors and managers play a significant role in selecting private firms to take them public. Also, since SPACs raise proceeds from SPAC IPOs, SPAC targets receive proceeds from SPAC IPOs after business combinations are completed, which can be used for new investment and operation expansion.

This paper makes several contributions to the scant literature on SPACs. First, we conduct analyses by using pre-listing firm characteristics not available in the U.S. For example, due to the limitation of data in the US, Kolb and Tykvová (2016) exploit accounting variables immediately after listing as a proxy for variables right before listing. Also, most prior studies on US SPACs focus on post-listing performance or survival rate (e.g., Cumming et al., 2014; Kolb and Tykvová, 2016; Vulanovic, 2018). However, data on

private firms in Korea allows us to compare SPAC targets' performances before and after listings.

Second, our study compares the financing and investment of SPAC targets to those of IPO firms before and after listing. We find that SPAC targets increase both financing and investment after listing relative to IPO firms. These findings can shed light on the different motives of listing via SPAC merge with IPOs suggested by Pagano et al. (1998).

Third, we highlight the incentives and requirements of SPAC sponsors. Dimitrova (2017) shows that a deep discount in warrants and common shares for sponsors causes sponsors to be incentivized for any acquisitions rather than no acquisitions. He explains the incentive structure of sponsors brings out worse performance of SPAC targeted firms than traditional IPO firms following listing. On the other hand, SPAC sponsors in Korea should meet the qualification to enhance their accountability and specialty to protect SPAC investors. By exploiting Korean data, Kim et al. (2020) and Park (2022) illustrate that SPAC targets have no difference in post-listing performance from traditional IPO firms. In addition, after going public, we argue that SPACs select private firms in financing and investment needs by showing a higher increase in investments and financings for SPAC target than traditional IPO firms. Thus, it implies that the qualification for sponsors in Korea can solve the moral hazard of sponsors shown on SPACs in the U.S.

2.2. Institutional Background of SPACs in Korea

In the initial stage of Korean SPAC, a SPAC is formed by sponsors

such as securities companies, asset management companies, private equity firms, venture capital, or wealthy individuals through private placement of common stocks and convertible bonds. SPAC sponsor group is composed of a couple of sponsors, but it should have at least one authorized dealer with more than KRW 100,000,000,000 (equivalent to 100 million USD) in owned capital. Only well-known and large securities firms can meet this condition so that all SPACs include one securities company as a sponsor. The name of SPAC is structured by the name of a securities firm, a sponsor, and if a securities firm repeats to found SPACs, then the SPAC's name ends with the number of the repeated establishment of SPACs. For instance, *MIRAE ASSET* securities firm establishes the 5th SPAC as a sponsor, and then the SPAC is named *MIRAE ASSET* SPAC No 5. Additionally, SPAC managers in Korea should be managers of financial investment companies. Those conditions aim to enhance the specialty and responsibility of SPACs for investor protection.

An offer price of common stocks in a private placement to sponsors is commonly KRW 1,000, a 50% discount price relative to a public offering in a SPAC IPO. This structure in Korea makes incentives of SPAC sponsors more aligned with one of the public investors of SPAC IPOs in Korea than in the U.S. On the other hand, US SPAC sponsors receive shares at a deep discount price, almost 99% discount, as promoted shares. This causes US SPAC sponsors to search for targets to sell their shares after completing a business combination.

The conversion price of convertible bonds is KRW 1,000. In other words, sponsors can convert convertible bonds to common shares at KRW 1,000 per share after a business combination. When convertible bonds are

converted into common shares, it can cause ownership dilution of existing shareholders of merged firms like warrants. However, since sponsors are subject to a 6-month or one-year lock-up following a business combination, they can sell common shares or convert from convertible bonds to common shares after a lock-up period is ended. Raised initial capital from sponsors is used to cover the operating expenses of SPACs.

A SPAC goes public via an IPO. The IPO process for the SPAC is relatively simple because it does not have business operations as a blank check company, and target firms are not found in the process of the IPO. Accordingly, SPAC investors depend on the SPAC IPO prospectus, which involves experiences and backgrounds of SPAC management and sponsors, and targeted industry sectors. The U.S. SPAC IPOs offer units comprising one share of common shares and a fraction (such as a half or a third) of a warrant to buy common stock. Meanwhile, Korean SPACs issue only common stocks to public investors in SPAC IPOs because firms are prohibited from issuing stock warrants alone. An offer price of common shares is generally KRW 2,000 (equivalent to $2). At least 90 % of proceeds from SPAC IPOs should be deposited into a trust account until a SPAC is merged with a target firm.

SPACs should finish all De-SPAC processes within 36 months following an IPO, while US SPACs should complete De-SPACs within two years. Suppose SPACs fail to complete a business combination within the pre-defined period. In that case, SPACs are liquidated, and deposited proceeds from IPOs with interest are distributed to the SPAC shareholders based on their ownership.

After a SPAC searches for a target, it sends a letter of intent to the target. If SPAC and the target reach an agreement for the merger, the SPAC announces the target firm to the SPAC's shareholders to receive approval from them. If shareholders disagree with targeted firms, they have the right to redeem their shares before or after shareholder meetings. On the other hand, sponsors who own shares cannot have voting rights and redeem shares. Regarding De-SPAC methods, only a merger and one deal are allowed in Korea. In contrast, not only a merger but also acquisitions can be executed in the process of De-SPACs in the U.S. Once De-SPAC is consummated, the SPAC ceases, and a merged target becomes a publicly traded firm.

2.3. Data and Variables

2.3.1. Sample Construction

Our sample starts from 2010 to 2021 because the first SPAC IPO in Korea was held in 2010. To compare SPAC mergers and traditional IPOs, we include traditional IPOs on KOSDAQ since Korean SPACs are listed on the KOSDAQ market. When private firms go public, issuers for SPAC IPO and traditional IPOs are required to file a Securities Issue Report to the Financial Supervisory Service (FSS), similar to the U.S. Securities and Exchange Commission (SEC). We manually obtain detailed information on those SPACs and IPOs such as offer prices, total proceeds, listing dates, SPAC targets, SPAC merger dates, and venture capital involvement from Securities Issue Reports.

All accounting data is extracted from Dataguide. In Korea, because external auditors mandatorily audit private firms[10], we can exploit financial information on private firms as well as public firms. To capture equity issuances correctly, we manually collect equity issuance data from Securities Issue Reports filed to Financial Supervisory Service[11]. Detailed information on primary equity issues, including the announcement date, the amount of proceeds, the offer price, the number of shares to be offered, and entities who receive the shares in a private placement[12].

Table 2.1 shows the number and status of SPACs listed in KOSDAQ until 2021. Panel A of Table 2.1 reports that Korea has 217 SPACs listed on KOSDAQ since the first SPAC in Korea was conducted in 2010. Out of 217 SPACs, 119 SPACs have completed business combinations or are in progress, and 52 SPACs were liquidated. If a SPAC cannot finish a business combination within three years after SPAC IPOs, SPACs are liquidated, and total proceeds from SPAC IPOs are distributed to SPAC investors. 46 SPACs are searching for targets.

[Insert Panel A of Table 2.1]

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[10] Criteria for firms subject to external audit: total assets of 12 billion won or more, liabilities of 7 billion won or more, sales of 10 billion won or more, and employees of 100 or more

[11] A variable of "Increase in Equity" provided by Dataguide aggregates all cash inflows related to stocks. Proceeds from issuing shares account for most of this item, but other activities can generate cash inflows related to stocks such as exercise of share options or disposition of treasury shares.

[12] Excluding the sale of old or secondary shares by existing shareholders, the size of the stock offering and the increase in equity are not significantly different.

Panel B of Table 2.1 displays the distribution of the number and raised proceeds from SPAC IPOs by year. In 2010, the first year of the introduction of SPAC IPOs, 18 SPACs went listing through IPOs. Only 9 SPACs completed business combinations, and the rest were liquidated. The SPAC IPO market was silent for a couple of years, but since 2013, 24.5 SPACs went public via IPOs every year. The average total proceeds from SPAC IPOs is around 10.73 billion won (approximately $10.7 million). SPAC cannot withdraw deposited proceeds from IPOs until a SPAC finishes merging with a target firm.

[Insert Panel B of Table 2.1]

When SPAC and an unlisted company complete the merger, the private firm's existing shareholders will receive shares of the SPAC in proportion to the merger ratio. According to the Korean Capital Markets Act, the merger ratio is determined by the listed SPAC's market value and the unlisted firm's fairly evaluated asset value and profitability. Raised proceeds determine SPAC value because a SPAC is a shell company. Thus, the more the SPAC raises proceeds, the more dilute the ownership of the existing shareholders of the unlisted company merging with the SPAC. Therefore, larger proceeds from SPAC IPOs impact the swap ratio, which is unfavorable to target firms, and existing shareholders of target firms experience ownership dilution after the merger process is completed.

Private firms go public through either a SPAC merger or a traditional IPO. Table 2.2 reports the number, average proceeds, and gross proceeds of SPAC mergers and traditional IPOs by year. From 2010 to 2021, 110 private firms were listed via the SPAC merger, and 623 private firms in non-financial

industries were listed on KOSDAQ via traditional IPOs. Only 11 private firms become public firms through SPAC mergers for the first five years after the first SPAC IPO in 2010. After that, about 14.1 private firms are listed on the KOSDAQ exchange via the SPAC merger. Meanwhile, since 2010, the number of listed firms through traditional IPOs has steadily increased except for 2012.

[Insert Table 2.2]

Total proceeds of the SPAC merger are raised proceeds from SPAC IPOs. Total proceeds from SPAC IPO deposited in a trust account can be available to SPAC target firms after a complete business combination. Thus, those proceeds are similar to proceeds if SPAC target firms would raise capital from traditional IPOs. While the average injected proceeds to SPAC target firms is about KRW 11.04 billion (approximately $11 million), the average raised proceeds from traditional IPOs is KRW 33.43 billion (roughly $33.4 million), three times as much as those proceeds from SPAC IPOs. The difference in proceeds between SPAC mergers and traditional IPOs becomes more pronounced over time. Figure 2.1 displays this pattern. Especially since 2015, except in 2018, SPAC's average proceeds were less than a quarter compared to traditional IPOs every year.

[Insert Table 2.3]

Panel A of Table 2.3 displays the distribution of 2-digit industry classification for SPAC targets and traditional IPOs. Most SPAC targets and IPO firms are concentrated in the manufacturing and the information and communication industries. SPAC targets and IPO firms in the manufacturing

industry account for about 62.73% and 68.22%, respectively, and those in information and communication take up around 21.82% and 17.82 %, respectively. We find no significant difference in the distribution of industries between SPAC targets and IPO firms (Pearson $\chi 2(11)= 10.887$, Pr=0.453).

Because of the high cluster of manufacturing, information and communication industries, Panel B of Table 2.3 subdivides 2-digit industry classifications into 3-digit ones. Although the overall distributions of SPAC targets and traditional IPOs show similar patterns across 3-digit industry classification, the proportion of traditional IPO firms in computer and information service industries is higher than SPAC targets. Given that these two industries can be considered high-tech industries, these results show that private firms in high-tech industries prefer traditional IPOs to SPAC mergers. Colaco et al. (2017) find that the presence of and an increase in investor attention are associated with higher initial valuations at IPO. Several studies, such as Chang and Kwon (2020), report investors' high attention in the IT industry. Altogether, computer and information service firms are likely to raise necessary funds through IPO without using SPAC due to high investor interest. *EBIT* and *Sales* are the dollar amount of EBIT and sales revenue divided by billion, respectively. *Cash_TA* is a ratio of cash to total assets. *Leverage* is total debt to total assets, *OCF_TA* is operating cash flow to total assets, and *lntan_TA* is intangible assets to total assets. *Sales Growth, Cash_TA, Leverage, OCF_TA, and Intan_TA* are winsorized at 1% in each tail. *Tech_Firm* is an indicator variable equal to one if private firms are classified into those industry codes: 261 (Manufacture of semiconductor), 262 (Manufacture of electronic components), 263 (Manufacture of computers and

peripheral equipment), 264 (Manufacture of communication and broadcasting apparatuses), 272 (Manufacture of measuring, testing, navigating, control and other precision instruments), 612 (Telecommunications), 620 (Computer programming, consultancy, and related activities), 631 (Data processing, hosting and related activities; web portals) and 639 (Other Information Service Activities). *Firm_Age* indicates firm age based on a founding year.

2.3.2. Empirical specifications

(1) The choice between SPAC mergers and traditional IPOs

We want to analyze how the pre-listing characteristics of SPAC targets differ from traditional IPO firms by using logit regressions. This analysis examines Gryglewicz et al. (2021)'s prediction that firms with higher asset intangibility and volatile revenue prefer SPAC mergers over traditional IPOs.

The dependent variable is a dummy variable that equals one if a private firm chooses SPAC merger and zero otherwise. Explanatory variables include total assets, sales, leverage, cash, sales growth, asset growth, firm age, intangible assets, volatility of cash flow, and the dummy for firms with venture capital financing. Technology dummy for firms in the technology industry are included in the logit regression. All firm characteristics are measured as of the fiscal year immediately before listing.

$Prob(SPAC\ merger)_i = f(Size, Sale\ growth, Cash, Leverage,$
$Operating\ Cash\ Flow, intangible\ assets, Technology\ Industry, firm\ age,$

Vencture Captial, market conditions)

(2) Comparison between pre-listing and post-listing financing and investments of SPAC targets

We exploit the difference-in-differences method to investigate whether SPAC targets increase financing and investment compared to IPO firms. Investments are measured using items related to cash flow from investment activities in the cash flow statement.

$$Inv_i = f(Treat, Post, Treat * Post)$$

Control group includes IPO firms listed on KOSDAQ. Much literature shows that SPAC targets have worse long-term performance than IPO firms after firms become public. However, it only compares post-listing performance between SPAC targets and IPO firms because it cannot observe a pre-listing difference between the performance of SPAC targets and IPO firms in the U.S.

Even though SPAC targets tend to underperform IPO firms following listing, SPACs targets might show much more significant improvement than IPO firms from before to after listing. Thus, difference-in-differences analysis can show how listing via SPAC may enhance operating performance relative to traditional IPOs. However, in Kim et al. (2020), they can only conduct univariate tests for difference-in-differences over a three-year window [-1,+1]

due to the small number of observations. In this paper, we conduct multivariate tests for difference-in-differences over different windows.

2.4. Determinants of SPAC mergers and traditional IPOs

2.4.1. Pre-listing firm characteristics

Panel A of Table 2.4 shows mean and median pre-listing firm characteristics for SPAC targets and traditional IPO firms. Pre-listing firm characteristics are measured in previous years of going public. The KOSDAQ exchange provides technology special tracks of listings (herein, technology listing) for private firms which currently cannot meet requirements for listings of KOSDAQ but would be approved as firms with outstanding technology. Since those firms have different characteristics from private firms that go public via a general listing route, we distinguish the former from the latter in Panel A. Column 1 includes all SPAC targets. Column 2 covers only SPAC targets with technology listings, and column 3 deals only with general SPAC targets, not technology listings. Similarly, column 4 covers all traditional IPOs. Column 5 and 6 includes traditional IPO firms with technology listings and traditional IPO firms excluding technology listings, respectively. Column 7 presents the difference between SPAC and traditional IPO firms through mean and median values for each characteristic. Column 9 is identical to Column 7, except technology listings are excluded. Column 8 shows the p-value for the statistical significance of the difference between the mean and median between the two groups presented in column 7. Similar to Column 8,

Column 10 displays the p-value for the statistical significance of the values presented in Column 9.

[Insert Table 2.4]

The mean total assets of SPAC targets and traditional IPO firms are KRW 37.169 billion (about $37 million) and 58.778 billion won (about $59 million), respectively. The difference in the mean total assets between the two groups is KRW 21.609 billion, where the difference is statistically significant at the 5% level. The difference in the median total assets is statistically significant at the 1% level.   In addition, when we exclude technology listing firms in our sample, the differences in mean and median total assets between the two groups become larger, and the statistical significance for those differences becomes even stronger. These patterns are similar in EBIT and Sales, which are the qualification of listings via traditional IPOs. SPAC targets have significantly lower EBIT and sales than traditional IPOs before they are listed. These results imply that private firms that cannot satisfy conditions for listing are likely to choose the SPAC merger as an alternative way to access the public market.

Other than total assets, EBIT, and Sales, we find no statistical significance of differences in means and medians between the two groups regarding *Sales growth, Cash_TA, Leverage, OCF_TA, Intan_TA,* and *Firm_Age*. As shown in Table 2.2, private firms classified in the technology industry are more likely to choose a route of traditional IPO than SPAC merger, inconsistent with Gryglewicz et al. (2021). We conjecture that since firms in the technology industry are relatively well-known to investors, enabling them to have successful IPOs, they can go public through traditional

IPOs. Overall, Panel A of the Table 2.4 implies that rather than private firms choosing between SPAC mergers and traditional IPOs, firms that have difficulty successfully raising capital through traditional IPOs choose SPAC mergers.

Panel B of Table 2.4 reports the correlations between variables in Panel A. *EBIT*, *Gross Sales*, and *Firm_Age* have positive and strong correlations with total assets because they are closed associate with firm size. Also, because both EBIT and operating cash flow (OCF) can capture firm performance, we observe a significant positive correlation between *EBIT* and *OCF_TA*.

2.4.2. Logit regressions results

Table 2.5 shows logit regression results where the dependent variable equals one if private firms become public firms through SPAC mergers and zero if they become public firms through traditional IPOs. The independent variables include *lnTA*, *Gross Sales*, *EBIT*, *Cash_TA*, *Leverage*, *OCF_TA*, *Intan_TA*, *Sales growth*, *VC_Owneship*, *Firm_Age*, and the technology industry dummy variable (*Tech_Firm*). The Mean and standard deviation of KOSDAQ daily return for the past 252 business days were also included in the regression equation to control the market condition. All independent variables are observed in years immediately before listings. Industry and year-fixed effects are included, and standard errors are clustered at the industry level. Column 1 to 3 have a total sample with technology listings, and column 4 to 6 excludes technology listing. As shown in Panel B of Table

2.4, since *lnTA*, *Sales*, and *EBIT* are strongly correlated with each other, we include only *lnTA* in columns (1) and (4), only *Sales* in columns (2) and (5), and only *EBIT* in columns (3) and (6) with other control variables. In columns (1) to (3), the coefficients of *lnTA*, *Sales*, and *EBIT* corresponding to the listing requirements are statistically significant. In column (4) to (5), the coefficients of *lnTA*, *Sales*, and *EBIT* becomes even larger and more statistically significant. In addition, private firms in the high-tech industry are more likely to choose traditional IPOs than SPAC mergers. Meanwhile, other control variables have insignificant coefficients, implying that other firm characteristics do not affect the determinants of SPAC mergers and traditional IPOs.

[Insert Table 2.5]

In addition, in Table 2.5, we conduct univariate tests for financing and investment activities before and after becoming public. We look at investment to explore why private companies not likely to meet listing requirements such as EBIT or sales are relatively small and likely to suffer information asymmetry and choose SPAC to merge. Pagano et al. (1998) argue that the primary motivation of IPOs is to lower leverage and rebalance their accounts for private companies with high growth. However, small private firms such as SPAC targets cannot be applied to Pagano et al. (1998). We explore whether financially constrained private firms raise additional funds and increase investment by reducing information asymmetry through the SPAC merger. Bai et al. (2021) theoretically suggest that SPAC sponsors act like non-bank certification intermediaries and play a role in reducing information asymmetry in the listing process of smaller and riskier firms.

SPACs alleviate private firms' information asymmetry and help them go public on a stock market. After listing, we want to explore whether SPAC targets raise additional funds relative to traditional IPO firms.

2.5.   Comparison of pre-listing and post-listing performance

2.5.1. Univariate results

Tables 2.6 and 2.7 compare pre-listing and post-listing financing and investment activities of SPAC targets and traditional IPOs. Table 2.6 presents the mean and median change in financing and investment activities from T-1 year (or, T-2 year) to T+1 year (or T+2 year), given T year is a listing year. Also, p-values are reported from a t-test and Wilcoxon signed-rank test to test differences between SPAC targets and traditional IPOs. Looking at various windows, the variation in financing and investment activities is severe every year, so the results may be distorted if only one specific window is examined. *ΔFinCF_TA* measures net cash flow changes from financing activities before and after listing.   For example, the mean *ΔFinCF_TA* of the SPAC targets in the [T-1, T+1] window is 3.15, meaning net cash flow for financing activities for SPAC targets increases by 3.15 % one year after listings compared to one year before listings.   While *FinCF_TA* indicates net cash flow from financing activities, *FinIn_TA* refers to cash inflows from financing activities over total assets. *Equity Issue_TA* is the cash inflow from stock issuance to total assets, and *ln (Equity Issue)* is the logarithm of the cash inflow from stock issuance (in units of KRW 1,000). *Debt Issue_TA* is the

cash inflow from debt issuance to total assets, and ln (Debt Issue) is the logarithm of the cash flow from financial debt issuance (in units of KRW 1,000).

[Insert Table 2.6]

Regardless of the window period, $\Delta ln(Equity\ Issue)$ and $\Delta InvOut\_TA$ are significantly larger for SPAC targets than traditional IPO firms. In other words, compared to traditional IPO firms, SPAC targets raise more funds through stock issuance and spend more investment in T+1 year (or T+2 year) after T listing year relative to T-1 year (or T-2 year). Although differences in $\Delta FinCF\_TA$, $\Delta FinIn\_TA$, $\Delta Equity\ Issue\_TA$, $\Delta InvCF\_TA$, and $\Delta InvIn\_TA$ for two groups are not always statistically significant in all periods, overall SPAC targets have significantly higher values in differences than traditional IPO firms. These results are consistent with our hypothesis.

2.5.2. Multivariate results

2.5.2.1. Financing activities

In Panel A of Table 2.7, we conduct multivariate analyses to explore whether changes in pre-and post-listing financing activities of SPAC targets differ from traditional IPO firms. Specifically, we use five years from T-2 year to T+2 year for SPAC targets and traditional IPO firms. To measure financing activities, dependent variables are *FinCF_TA, FinIn_TA, Equity Issues/TA, ln(Equity Issues), Debt Issue/TA, ln(Debt Issue).* In the regression

model, *SPAC* is an indicator variable equal to 1 for private firms listed on the stock exchange via SPAC mergers and 0 via traditional IPOs. *After* is an indicator variable equals 1 for firm-year observations corresponding to T+1 and T+2 years. Our regression analysis includes *SPAC*, an interaction between *SPAC* and *After*, and other control variables, industry fixed effect, and year fixed effects. We are interested in the interaction term coefficient between *SPAC* and *After*, which can capture the difference-in-differences. The interaction term measures how different pre-listing and post-listing financing changes for SPAC targets are from traditional IPO firms.

[Insert Table 2.7]

The results of Table 2.7 show that the coefficients of *SPAC* in all columns are statistically significant and negative at the 1% level except for variables related to debt issuances such as *Debt Issue/TA* and *ln (Debt Issue)*. It suggests that SPAC targets raise less financing than traditional IPO firms before going public. In regressions using *FinCF_TA*, *Equity Issues/TA*, and *ln (Equity Issues)* as dependent variables, the interaction term coefficient between *SPAC* and *After* is statistically significant and positive at the 1% level. These results show that SPAC targets, which had a relatively small amount of capital raising before going public, can raise more funds through stock issuance after listing. Our results are consistent even after controlling firm size and age in regression models.

[Insert Table 2.8]

Table 2.8 examines which types of equity SPAC targets and IPO firms issue among public offerings, rights offerings, and private placement to

raise additional funds. 74.3 % of equity issuances by SPAC targets are private placements within three years following listing. This pattern is similarly observed in IPO firms. However, compared to traditional IPO firms, most investors in private placements for SPAC targets are alliance partners, accredited investors, or the largest shareholder.

2.5.2.2. Investment activities

[Insert Table 2.9]

Table 2.9 examines whether changes in pre-listing and post-listing investments of SPAC targets differ from those of traditional IPO firms. Similar to Table 2.7, data spans from T-2 to T+2 years based on listing year T for SPAC targets and traditional IPO firms. Dependent variables are *InvCF_TA*, net cash outflow from investment activities to total assets, *InvOut_TA*, cash outflow from investment activities to total assets, and *InvIn_TA* variable, cash inflow from investment activities to total assets. *SPAC* and the intersection between *SPAC* and *After* are used as explanatory variables. We control the variables that affect investment, such as *lnTA*, *Firm_Age*, *Sales Growth*, and *Cash_TA* and consider the industry fixed and year fixed effects. In this analysis, we are interested in the interaction coefficient between *SPAC* and *After*, which measures how changes in investments for SPAC targets are different from those for traditional IPO firms before and after listings.

In columns (1) to (4), the negative coefficient of SPAC means that SPAC targets spend less investment than traditional IPO firms before listings. Meanwhile, as shown in columns (5) and (6), the positive coefficient of SPAC

indicates SPAC targets have higher capital inflow from investment activities before listing, which means that SPAC firms sell more assets than traditional IPO firms. In addition, the interaction term coefficients between *SPAC* and *After* are statistically positive and significant at the 1% level in columns (1) to (4). It means that after listing, the incremental net cash flow and cash outflows from investment activities for SPAC targets are higher than traditional IPO firms. However, after controlling for *Sales Growth* and *Cash_TA*, the interaction term coefficient between *SPAC* and *After* becomes insignificant in column (6). Thus, SPAC firm has no significant difference in cash inflow from investments than traditional IPO firms following listings. Overall, these results are consistent with our hypothesis that the primary purpose of the SPAC merger is to raise additional funds for investments.

Table 2.10 investigates whether the increase in investments shown in Table 2.9 is overinvestment. Market to book ratio or Tobin's Q is usually used to capture investment opportunity, but the market price for firm value does not exist for private firms. We use sales growth as a proxy for investment opportunities. Therefore, if private firms with high sales growth before listing increase investment following listings, it is consistent with our prediction that the financing for investment is one of the main motives for the SPAC merger.

[Insert Table 2.10]

Over the sample in Tables 2.7 and 2.9, we classify the top 50% and bottom 50% based on average sales growth for the previous two years before listing. *High Sales Growth* is equal to one for the top 50% of firms and 0 for the bottom 50% of firms. We repeat using dependent variables used in Table

2.8, adding up *High Sales Growth*, the interaction between *High Sales Growth* and *After*, the intersection between *High Sales Growth* and *SPAC*, and the triple interaction of *High Sales Growth*, *After,* and *SPAC* as independent variables. The coefficient of the triple term indicates whether SPAC targets with a high sales growth before listing change investment after listing. As shown in Table 2.8, the intersection of *SPAC* and *After* has a statistically significant and positive coefficient value. This result suggests that SPAC targets increase investment relative to traditional IPO firms after listing. The coefficient of the triple interaction term has a statistically significant positive value in columns (1) and (2), where the dependent variable is *InvCF_TA*, which is consistent with our prediction. These results are mainly driven by a decrease in cash inflow from investment activities rather than an increase in cash outflow from investment activities. In columns (3) and (4), the coefficient of the triple intersection term is not statistically significant, where the dependent variable is *InvOut_TA*. In columns (5) and (6), the coefficient of the triple intersection term is the statistically significant and negative value where the dependent variable is *InvIn_TA*.

2.6. Robustness Tests

2.6.1. Placebo Tests

Table 2.11 shows that the analysis results so far are not caused by the characteristics of SPAC targets. There's a possibility that the increase in investment and financing of SPAC targets after becoming a public company

is due to some characteristics shared by SPAC firms, not because of the functions provided by SPAC. A placebo test is performed in this table to rule out this possibility. According to the following two-step procedure, the one matching company nearest to the SPAC merger firm is selected. First, the propensity score is calculated based on *lnTA, lnSales, Firm_Age, Cash_TA, Sales Growth*, and 3-digit industry code for all private firms that are obligated to submit audit reports. Second, the firm with the nearest propensity score is matched among the observations with the same year and 1-digit industry code based on the data of the year immediately preceding going public through the merger with SPAC. However, matching is performed within a caliper of 0.25 standard deviation to prevent matching with companies with significant differences in characteristics. Panel A of Table 2.11 reports the pre-listing firm characteristics for SPAC and matched unlisted firms and the difference in mean and median between the two groups. Two years of sales revenue are needed to calculate sales growth, so a company that merges with SPAC within two years of its establishment cannot calculate sales growth. In addition, Korean companies introduced a new accounting standard called the Korean version of International Financial Reporting Standards (K-IFRS) between 2009 and 2011, making it difficult to use the sales growth rate immediately after the new system was introduced. Therefore, it is difficult to use the sales growth rate of these companies as a criterion for matching, and as a result, if the sales growth rate is used as a matching criterion, loss of some samples occurs. The top of Panel A of Table 2.11 displays the results of the matching analysis performed based on the remaining five variables, excluding the sales growth rate, and the bottom shows the results, including the sales growth rate.

[Insert Table 2.11]

After that, in Panel B and C of Table 2.11, a placebo test is performed using a matched private firm. Specifically, Panel B of Table 2.11 is similar to Panel A of Table 2.7, and Panel C of Table 2.11 is similar to Table 2.9. In Panel B of Table 2.11, *FinCF_TA* and *FinIn_TA*, which are variables related to financing, are used as dependent variables. *SPAC_Matched* is a dummy variable with a value of 1 when it is a matched private firm with characteristics similar to those of SPAC Firm. *After* is an indicator variable equals one after the SPAC targets/Traditional IPO Firms' going public and 0 otherwise. Since Matched Private Firm is selected based on the same year as SPAC Firm, a placebo test can be performed through a regression equation using *SPAC_Matched*, *After*, and the intersection of these two variables as independent variables. As for the result of the placebo test predicted in advance, the coefficient of *SPAC_Matched* is significant with a negative value, whereas the interaction term of *SPAC_Matched* and *After* should not be statistically significant. This is because firms with similar characteristics to SPAC were also failing to raise as much funding as companies that chose traditional IPO, and this trend would have continued because they did not merge with SPAC. Equations (1) and (2) use *FinCF_TA* as a dependent variable, and (2) and (4) use *FinIn_TA* as a dependent variable. Equations (1) and (3) are the analysis performed on the matched sample constructed, excluding the sales growth rate, and Equations (2) and (4) are the analysis performed on the matched sample made, including the sales growth rate. In

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equations (1)-(3), the predicted results are observed, and in equation (4), the coefficient of *SPAC_Matched* has a negative value at a statistically marginal level.

In Panel C of Table 2.11, investment-related variables *InvCF_TA, InvIn_TA*, and *InvOut_TA* are used as dependent variables. As in Panel B of Table 2.11, the coefficient of *SPAC*_Matched is predicted to have a statistically significant negative value, and the cross term of *SPAC_Matched* and *After* is expected to have a statistically insignificant value. Equations (1), (3), and (5) are the analysis performed on the matched sample constructed excluding the sales growth rate, and Equations (2), (4), and (6) are the analysis performed on the matched sample made including the sales growth rate. In all equations, the predicted results are confirmed. In summary, the increase in financing and investment after the listing of SPAC companies is not a result of their characteristics.

2.6.2. Difference in difference in differences

Table 2.11 confirms that the increased financing and investment of companies that became public firms through the merger with SPAC were not the result of the characteristics of these companies. In Table 2.12, we want to confirm that the increase in financing and investment after going public is more significant in SPAC firms than in traditional IPO firms. The specific identification strategy is as follows. Similar to the analysis performed on SPAC firms in Table 2.11, we find the nearest matched firm for each

traditional IPO firm. Matching is processed based on the following characteristics among firm-year observations with the same year and 1-digit industry code: *lnTA. lnSales, Firm_Age, Cash_TA, Sales Growth,* and 3-digit industry code. When matching is completed, the difference in *FinCF_TA* between the SPAC firm (or traditional IPO firm) and its matched firm is defined as *d_FinCF*. For example, suppose Company A went public in 2013. Using the accounting information of company A in 2012, the year immediately before listing, unlisted company B in 2012 is selected as a matching company. After that, the difference between *FinCF_TA* of the same year between A and B becomes *d_FinCF_TA*. Similarly*, d_FinIn_TA, d_InvCF_TA, d_InvOut_TA*, and *d_InvIn_TA* refer to differences in *FinIn_TA, InvCF_TA, InvOut_TA,* and *InvIn_TA* between two firms constituting a pair. Using *d_FinCF_TA, d_FinIn_TA, d_InvCF_TA, d_InvOut_TA*, and *d_InvIn_TA* as dependent variables, respectively, and using *SPAC*, *After*, and the interaction term of both as independent variables, a Difference in Differences (DID) analysis shows that investment and financing increased significantly after listing in SPAC Firms.

[Insert Table 2.12]

Panel A of Table 2.12 reports the matching analysis performed on traditional IPO companies. In Panel B of Table 2.12, *d_FinCF_TA* and *d_FinIn_TA* related to financing are dependent variables. In advance, we predict that the coefficient of SPAC would have a statistically significant negative value, and the coefficient of the cross-term would have a statistically

significant positive value. This is consistent with the hypothesis of this study that companies that choose to merge with SPAC have difficulty raising funds before going public and that the difficulty is alleviated a lot after becoming a public firm. Such results are observed in all equations in Panel B of Table 2.12.

In Panel C of Table 2.12, investment-related *d_InvCF_TA, d_InvOut_TA*, and *d_InvIn_TA* are used as dependent variables. Like Panel B, the coefficient of *SPAC* is predicted to have a statistically significant negative value, and the coefficient of the cross-term is expected to have a statistically significant positive value. Equations (1) and (2) using *d_InvCF_TA* calculated using net investment as a dependent variable, and Equations (3) and (4) using *d_InvOut_TA* calculated using investment expenditure as a dependent variable show results as expected. On the other hand, such a result is not observed in Equations (5) and (6) using *d_InvIn_TA*, calculated based on cash inflows due to asset sale, as a dependent variable. This shows that SPAC firms do not have more cash from selling assets before going public than traditional IPO firms, suggesting their motivation for pursuing a merger with SPAC.

2.7.   Conclusions

We exploit Korean SPAC mergers and traditional IPOs. A Korean empirical setting allows us to compare private firms' pre-listing to post-listing performance through the difference-in-differences method.

We find that private firms with smaller size, fewer sales, or less profits are likely to use SPAC mergers relative to traditional IPOs for listings. In addition, SPAC targeted companies increase subsequent financing and net investment cash flow more than IPO companies after going public. Particularly, additional financing is conducted via equity issuances such as right offerings or private placements. Our results suggest that SPACs help private firms with information asymmetry access the public market and relieve the financial constraints of those private firms.

Since 2020, the number of and total proceeds of SPAC IPOs in the U.S. had increased, and SPAC has received a lot of attention again from academics and policy makers. SPACs are blamed for the poor performance of SPAC targets after listing. Kolb and Tykvová (2016) and Dimitrova (2017) explain that incentive structures of sponsors originated from promoting shares induce SPAC sponsors to select even bad acquisitions, resulting in worse performances of SPAC targets. To protect SPAC public investors, SEC has required SPACs to file a more detailed and stricter disclosure on targeted firms before business combination since 2021. Recently, a policy maker suggested that since the incentives of SPAC sponsors are not aligned with SPAC public investors, a new regulation on sponsors should be enacted.

According to regulations on SPAC in Korea, SPAC sponsors should be composed of at least one securities firm which meets certain qualifications. This regulation enhances the specialty and the accountability of SPAC sponsors. Besides, because promote shares of sponsors in Korea SPACs are much less discounted than in the U.S. SPACs, SPAC sponsors in Korea have more alignment with SPAC public investors than in the U.S. Thus, SPAC sponsors in Korea take responsibility for distinguishing the good type of target firms from the bad type of firms to maximize their profits.

A regulation and incentive structure for Korean SPAC sponsors can suggest a policy implication for SPACs. Thus, we can expect more positive effects of SPAC on private firms as SPAC sponsors are more aligned with public investors and responsible for their decisions for business combinations.

Chapter 3. CEO의 장기지향성과 투자 의사결정

3.1. 서론

CEO를 비롯한 경영진의 개인적인 경험과 특성이 기업의 의사결정에 미치는 영향에 대해서는 많은 연구가 이루어져 왔다. (Bertrand and Schoar, 2003; Malmendier and Tate, 2005; Adams et al., 2005) 그럼에도 불구하고 CEO의 개인적인 시간 선호 (time preference) 와 장기 지향성은 측정이 어렵기에, 기존 재무 연구들에서 거의 다루어지지 못 했다. 인간의 행위를 설명하기 위한 많은 경제학 이론에서 시간 선호는 핵심적인 개념이며, 특히 할인율에 대해서 다루는 재무경제학에서는 더욱 중요하게 여겨져 왔다. 그리고 많은 연구들은 시간 선호의 정도를 결정하는데 있어서 문화의 역할을 강조한다. (Rogers, 1994; Galor and Özak, 2016) 본 연구는 미시적인 차원에서 CEO 개인의 장기 지향성을 문화를 통해 포착하고, 이것이 그의 의사결정에 미치는 영향을 분석함으로서 상대적으로 선행 연구가 부족했던 주제를 탐구해보고자 한다. 구체적으로, 본 연구는 이민자들의 국가인 미국의 CEO들을 대상으로 하여 조상들로부터 문화를 통해 전승되어 온 장기 지향성의 정도가 그들의 투자 의사 결정에 미치는 영향을 분석한다.

문화는 학습을 통해 같은 사회환경 속에서 살고 있거나 산 적이 있는 사람들과 공유하는 집단적인 현상으로, 한 집단을 구성하는 사람들

을 다른 집단의 구성원들과 구별하게 하는 집단적 정신 프로그램이다. (Hofstede et al., 2010) 부모의 자녀 교육, 동료나 친구들과의 교류, 그리고 학교와 같은 사회적 제도를 통해 문화는 선대에서 후대로 계승된다. (Bisin and Verdier, 2000) 그리고 문화의 계승은 할인율, 위험 회피, 신뢰 등 개인의 선호 체계에 영향을 미치는 다양하고 중요한 요인들을 결정하는데 중요한 역할을 담당한다. (Bisin and Verdier, 1998) 본 연구는 문화적 요인이 매우 긴 기간 동안 지속되면서 후세에 전승된다는 기존 연구들의 관점에 따라(Guiso et al., 2008; Guiso et al., 2016; Algan and Cahuc, 2010), 미국의 CEO들 역시 그들의 조상이 이민해 온 국가의 문화로부터 부분적으로 영향을 받는다고 가정한다.

조상으로부터 계승된 문화의 영향을 밝혀 내기 위해, 본 연구는 Liu(2016)와 Pan et al. (2017) 등 일부 기존 연구에서 사용되었던 것과 유사한 방법론을 이용한다. 1억개 이상의 가계도 데이터를 보유한 데이터베이스인 ancestry.com은 1820년부터 1957년까지 뉴욕 항을 통해 입국한 이민자들에 대한 자료를 제공한다. 이 자료를 이용하여, 특정한 성(Last Name)을 가진 사람들이 어느 나라로부터 이주해 왔는지를 추적할 수 있다. 그리고 이에 근거하여 각각의 성과 그 성을 가진 사람들이 이주해 온 국가의 장기 지향성 점수를 대응시킨다. 성은 부계 혈통을 통해 후대에 계속적으로 전승되기에, 이러한 방법은 아버지의 조상들을 통해 전승된 문화적 영향력을 부분적으로 포착할 수 있다. 반면, 어머니와 그녀의 조상들로부터 전승된 문화의 영향력은 상대적으로 포착하기 어렵다는 한계가 있다. 그러나 본 연구의 분석 대상이 된 CEO 중 97% 이상이 남성이며, 남성의 위험 선호와 사고 체계는 어머니보다 아

버지로부터 더 강한 영향을 받아 형성된다는 기존 연구들의 결과를 함께 고려할 때(Alan et al., 2017; Black et al., 2017), 본 연구의 접근법은 CEO의 의사 결정을 부분적으로 포착해낼 수 있을 것으로 기대된다.

본 연구에서 장기 지향성을 포착하기 위해 사용한 지표는 글로벌 리더십과 조직 행동 효능성 (Global Leadership and Organization Behavior Effectiveness, 이하 GLOBE)라는 데이터베이스가 제공하는 "미래 지향성 점수(Future Orientation)"이다. GLOBE는 재무 분야에서는 거의 다루어지지 않은 데이터베이스로서 (Karolyi, 2016), 62개국 825개 기업에서 근무하는 중간관리자들을 대상으로 하여 각 국가의 문화를 크게 9가지 차원에서 측정한다. 이 중 미래 지향성(Future Orientation)은 다음과 같이 정의된다: 조직이나 사회의 개인이 계획을 세우고, 미래에 대해 투자하며, 미래에 만족을 얻기 위해 현재를 희생하는 등 미래 지향적인 행동을 하는 정도. 이러한 정의에 입각하여, 본 연구는 장기지향성이 강한 CEO는 미래에 이익을 얻을 수 있는 투자에 더 적극적일 것이라고 가정한다.

재무 경제학에서 문화와 관련하여 가장 많이 이용된 척도는 Hofstede(2001)가 개발한 문화 지표이다. 이 지표에는 장기 지향성 (Long-term Orientation)이라는 유사한 이름의 차원이 존재한다. 그러나 Hofstede(2001)가 측정한 장기 지향성은 GLOBE의 미래 지향성과는 다른 측면을 포착한다. (Hofstede, 2006; Venaik et al., 2013) Hofstede의 장기 지향성은 미래의 보상을 지향하는 미덕의 수양을 의미

한다. 예를 들어, Hofstede가 장기지향적인 사회로 분류하는 사회는 절약하고, 실용성을 중시하며, 노년을 일찍 대비하는 사람들이 많은 사회이다. 반면 전통을 존중하고 체면을 지키기 위한 소비를 많이 하는 사회는 단기지향적인 것으로 분류된다. 반면, GLOBE의 미래 지향성은 계획과 미래의 성공에 대한 사회적 열망을 반영한다. Hofstede et al.(2010)은 Hofstede(2001)의 장기 지향성과 GLOBE의 미래 지향성 사이에는 상관관계가 없으며, 오히려 Hofstede(2001)의 다른 문화 차원인 불확실성 회피(Uncertainty Avoidance)나 권력 거리(Power Distance)와 상관관계가 있음을 보였다. 본 연구는 GLOBE의 미래 지향성이 CEO의 투자 결정에 영향을 미치는 문화적 요인을 더 잘 포착한다고 판단하여, 이 지표를 통해 한 사회가 얼마나 장기 지향적인지를 측정하였다.

본 연구의 주요 결과는 다음과 같다. 장기지향적인 문화를 가진 국가에서 조상들이 이민해 온 CEO가 재직하고 있는 기업은 다른 미국의 상장 기업들에 비하여, 총자산 대비 자본 지출이 많고, 인수도 더 많이 자주하며, R&D 비용도 더 많이 지출한다. 독일계 유럽 국가들은 라틴계 유럽 국가들보다 더 장기 지향적인 것으로 알려져 있는데, 실제로 독일계 유럽의 성씨를 가진 CEO가 재직 중인 기업의 총자산 대비 자본 지출은 라틴계 유럽의 성씨를 가진 CEO가 재직하는 기업들보다 약 5~7% 높다. 이러한 결과는 투자에 영향을 미치는 것으로 알려진 기업의 특성들뿐 아니라, 다양한 거시 경제 변수들과 불확실성, 그리고 CEO 개인의 다른 특성들을 통제해 준 가운데에도 동일하게 유지된다.

다양한 국가에서 이민 온 사람들이 함께 살아가는 미국 사회는 문화의 전승이 개인의 선호 체계에 미치는 영향을 잘 분석할 수 있도록 틀을 제공해준다. 그러나 동시에 본 연구에는 다음과 같은 문제가 존재한다. 한 가문이 미국으로 이민해 온 이후 많은 시간이 지나고 세대가 바뀌다 보면, 그들이 건너온 국가의 문화적 특성이 선호 체계에 미치는 영향은 점점 약해진다. (Borjas and Bratsberg, 1996; Berry and Sabatier, 2010) 약화되는 속도에 대해서는 논쟁이 있으나 (Gruber and Hungerman, 2008; Fernandez and Fogli, 2009), 세대가 지나감에 따라 영향력이 약화된다는 사실은 분명하다. 본 연구에서는 이민 1세대 CEO 여부를 확인할 수 있었던 2015년과 2016년의 Fortune 500 기업들을 대상으로 하여 부표본 분석을 수행하여, 성으로 측정한 장기지향성과 투자와의 상관관계가 이민자 CEO가 재직하고 있는 기업에서 더 강하게 나타남을 확인하였다.

　　　인과 관계의 확립을 위해, 본 연구는 다양한 추가 분석을 수행하였다. 창업자의 개인적 특성이 기업의 문화와 의사 결정에 영향을 미친다는 기존 연구를 고려할 때(Pan et al., 2017), 창업자가 동시에 CEO로 재직하고 있는 기업에서는 의사 결정에 있어서 더욱 CEO 개인의 영향력이 더 클 것으로 판단된다. 이런 기업에서는 성으로 포착한 CEO의 장기 지향성과 투자 간 상관 관계가 더욱 더 강하게 나타날 것이라고 판단하여, CEO의 창업자 여부를 파악할 수 있는 기업들만을 대상으로 부표본 분석을 수행하였고, 결과는 전체 표본을 대상으로 할 때와 동일하게 유지되었다. 또한, 이름(First Name)이 문화를 계승하려는 부모의 노력을 반영한다는 기존 연구를 반영하여(fryer and Levitt, 2004), 성과 동

일한 문화권에서 유래된 이름을 사용하는 CEO에게서 본 연구의 결과가 더 강하게 나타나는지를 검증하였다. 예측한 대로, 그러한 CEO들에게서는 성으로 포착한 장기 지향성과 투자 간 더 강한 양의 상관 관계가 확인된다.

　　　　본 연구는 활발하게 진행되고 있는 다음 세 가지 연구 분야에 기여한다. 첫째, 전승된 문화적 전통이 CEO 및 경영진의 의사 결정에 미치는 영향에 대해 탐구하는 최근의 여러 연구들을 보충한다. CEO의 개인적인 특성(Bertrand and Schoar, 2003; Hirshleifer et al., 2007; Adams et al., 2005)이나 경험(Custódio and Metzger, 2014; Malmendier et al., 2011)과 기업의 의사 결정 간 상관관계를 분석한 기존 연구는 많이 존재한다. 그러나 CEO가 조상으로부터 물려받은 문화적 전통에 주목한 연구는 2015년 이후 등장하기 시작하였다. (Liu, 2016; Nguyen et al., 2018; Brochet et al., 2019; Pan et al., 2017; Pan et al., 2020; Giannetti and Zhao, 2019) 대표적으로 Liu (2016) 는 부패한 문화권으로부터 이민 온 조상을 둔 내부자가 많은 기업은 내부자 거래, 배임 등 부정 행위를 많이 한다는 것을 보였으며, Brochet et al. (2018) 은 개인주의적인 문화를 가진 민족에 속하는 CEO는 실적 발표를 하는 자리에서 더 긍정적인 톤으로 발표한다는 것을 밝혀냈다. Pan et al.(2020)은 본 연구와 가장 유사한 연구로서, 불확실성 회피가 강한 문화권에서 선조들이 이민 온 CEO가 재직하고 있는 기업이 인수 활동을 더 활발히 한다는 것을 보였다. 이 논문은 Hofstede의 불확실성 회피 성향을 이용하여 설명 변수를 구성하였는데, 전술한 바 있듯이 Hofstede의 불확실성은 본 연구가 주목한 GLOBE의 미래 지향성과 약

한 상관관계가 있다. (Hofstede et al., 2010) 그러나 본 연구의 결과는 Hofstede의 불확실성을 기반으로 Pan et al. (2020)이 구성한 변수를 추가로 고려해줘도 동일하게 유지되며, 인수 뿐 아니라 자본 지출과 R&D에서도 일관된 결과를 발견하였다.

둘째, 본 연구의 결과는 이민자들을 이용하여 문화적 전통의 지속성을 탐구하려는 연구들에 실증 증거를 제공한다. 이민자는 자신이 태어나서 자랐던 국가의 법과 제도로부터 더 이상 영향을 받지 않지만, 그들이 이민 오기 전까지 가족과 사회로부터 학습한 문화적 전통은 그대로 보유하고 있다. 그리고 그 문화적 전통을 교육을 통해 후손에게 전달한다. 따라서, 이민자는 법 및 제도와 분리하여 문화가 개인의 의사 결정에 미치는 영향을 더 잘 탐구할 수 있도록 한다. Fernandez and Fogli(2009)는 여성 노동 참여율이나 문맹률 등을 이용하여 양성평등과 관련된 각 국가의 인식을 측정한 뒤, 이를 이용하여 양성 평등 인식이 떨어지는 국가로부터 조상이 이민해 온 이민 2~3세대 여성의 노동 참여율이 떨어짐을 보였다. Galor and Özak (2016)은 산업 혁명 전 농업 생산성이 높았던 국가에서 조상들이 이민해 온 유럽과 미국의 이민 2세대들이 더 장기 지향적으로 행동한다는 것을 보였다. Giuliano (2007)은 1970년대 남유럽에서 있었던 성 해방 운동으로 인해 여성의 가사 노동 부담이 줄어들면서 북유럽에 비해 부모와 같이 사는 자녀의 비중이 높아졌으며, 이러한 결과는 미국에 거주하는 남유럽 이민 2세대에게서도 동일하게 나타남을 보였다. 본 연구에서 이민 1세대 CEO의 비중은 15% 이하에 불과하다. 전술한대로 이민 1세대 CEO에게서 본 연구의 결과가 더 강하게 나타나기는 하지만, 이민자 자손이 CEO인 기업들에서도 본 연구의 결과는 유지된다. 이는 이민자 자손들에게도 이민해 온 국가의

문화가 영향을 끼친다는 것을 다시 한 번 실증한 것으로서, 기존 연구들에 기여한다.

마지막으로, 본 연구는 다른 경제학 및 경영학 분야들에 비해 상대적으로 문화의 영향력을 간과해온 재무 경제학에 문화를 접목하려는 최근의 연구들과 궤를 같이 한다. 핀란드를 대상으로 하여 투자자들은 지리적으로 더 가깝고, 모국어로 의사소통이 가능하며, CEO가 동일한 문화적 배경을 가진 기업의 주식을 더 많이 보유하고 매매함을 보였던 Grinblatt and Keloharju (2001)나 Hofstede(2001)의 개인주의 지수를 이용하여 국가 별 모멘텀 전략의 수익 차이를 설명했던 Chui et al. (2010) 등의 잘 알려진 연구들이 재무 경제학에도 존재한다. 그러나 그럼에도 불구하고 다른 경제학 분야에 비해 문화의 영향에 대해 탐구한 재무 분야의 연구는 수적으로 부족할 뿐 아니라, Hofstede(2001)의 연구에만 의존하는 등 다양성도 부족하다. (Karolyi, 2016) 본 연구는 상대적으로 부족한 이 분야의 연구를 보충하면서, 동시에 재무 경제학에서 잘 다루어지지 않았던 데이터베이스인 GLOBE를 활용하여 다양성을 넓히는데 기여한다.

논문의 이후 구성은 다음과 같다. 2장에서는 본 논문의 자료에 대해 설명하고, 성을 통해 CEO의 장기 지향성을 측정한 척도가 어떻게 구성되었는지 구체적으로 보인다. 3장에서는 본 연구의 주요 실증 결과를 제시하고, 이후 인과관계를 더 엄정히 확립하기 위해 추가적으로 수행한 분석들의 결과도 보인다. 그리고 마지막으로 4장에서 내용을 정리하면서 결론을 짓는다.

3.2. 자료와 방법론

3.2.1 미국 기업 CEO들의 조상이 이민 온 국가의 식별 전략

본 연구는 성을 통해 미국 기업 CEO들의 부계 혈통을 추적한 뒤, 이에 근거하여 조상으로부터 물려받은 문화적 가치가 CEO의 의사 결정에 미치는 영향을 탐구하려 한다. ExecuComp 데이터베이스는 1992년 이후 S&P 1500에 속한 경험이 있는 기업들을 위주로 하여 2,500개 이상의 미국 기업들에 재직했던 경영진과 이사들에 대한 정보를 제공하고 있다. 본 연구의 표본은 ExecuComp에서 성과 이름 모두에 대한 정보를 얻을 수 있었던 5,879명의 CEO들을 이용하여 구성되었다. 단, 이 과정에서 금융업에 속하는 기업들과 유틸리티 산업에 속하는 기업들의 CEO는 투자 의사 결정에 관심을 갖는 본 연구의 목적에 부합하지 않아 제외되었다.

CEO의 조상들이 어느 국가에서 이민 왔는지를 추정하기 위해 본 연구가 이용한 자료는 1820~1957년 사이 뉴욕 항을 통해 미국으로 이민 온 사람들에 대한 정보를 담고 있는 탑승자 명단(Passenger List)이다. 본 자료의 출처는 세계에서 가장 많은 가계도와 족보 관련 데이터를 보유하고 있는 ancestry.com이다. 이 자료 외에도 ancestry.com은 19세기와 20세기 초반에 이루어진 다양한 인구 조사

자료를 보유하고 있으며, 해당 시기에 살았던 사람들의 사망, 출생, 병역, 이주, 종교활동 등에 대한 다양한 정보 또한 제공하고 있다. [그림 3.1]은 뉴욕 항을 통해 입국한 승객들의 탑승자 명단을 제공하는 ancestry.com의 홈페이지 화면이다. 해당 데이터베이스를 통해 승객의 성과 이름, 미국에 도착한 날짜, 출생 연도, 출발지, 인종 및 국적, 탑승한 배의 이름, 그리고 탑승자 명단 원본을 확인할 수 있다. 또한 검색 창에 성을 입력하면, 해당 성을 가진 입국자의 정보만을 따로 확인할 수 있다. 단, 이 웹사이트는 현재로서는 이 자료를 일괄로 다운받을 수 있는 서비스는 제공하지 않고 있다. 따라서 분석에 필요한 자료를 수집하기 위해 별도의 크롤링(crawling) 작업을 수행하였다.

수집된 자료에는 입국자의 국적이 누락되어 있거나 미국(U.S.)으로 기재되어 있는 경우가 있는데, 이러한 경우 이민해 온 국가를 파악하는데 도움이 되지 않으므로 추후 조상들의 국적을 파악하는 과정에서 제외되었다. 국적이 기재되지 않은 입국자는 전체 입국자의 약 17%에 달하는데, 이 수치는 같은 자료를 이용하여 유사한 방식으로 미국 기업 창업자들의 부계 혈통을 추적했던 Pan et al. (2017)에서의 결과와 유사하다. 한편, 일부 이민자들의 탑승자 명단에는 국적 대신 백인(White, Caucasian)이나 흑인(Black) 등 인종이 기재되어 있다. 이러한 경우에도 마찬가지로 조상들의 국적을 추정하는 작업으로부터 배제되었다.

탑승자 명단을 이용하여 국적을 추정하는 과정에서는 연구자의

판단이 필요한 다양한 문제들이 존재한다. 이 중 상대적으로 중요하다고 여겨지는 세 가지 문제에 대해 본 연구는 다음과 같이 대응하였다. 첫째, 19세기와 20세기 초반에 작성된 자료이기에 일부 이민자들의 경우 그들이 이민 온 국가가 현재는 존재하지 않는다. 이러한 이민자들에 대해서는, 그 국가가 지배하고 있던 영토를 현재 지배하고 있는 국적을 대응시켰다.

둘째, 궁극적으로 본 연구는 특정 성을 가진 CEO의 조상이 어느 국가에서 이민 온 것인지를 추정한 후, 추정된 국가를 GLOBE의 미래 지향성 점수 (Future Orientation Score)와 대응시키고자 한다. 따라서 GLOBE의 조사 대상이 되었던 62개국이 아닌 다른 국가에서 이민 온 입국자에게는 대응될 미래 지향성 점수가 존재하지 않는다. 이러한 경우, 해당 국가가 속한 문화권의 미래 지향성 평균 점수를 해당 입국자에게 부여하였다.

셋째, 유대계 성씨를 가진 이민자들의 국적을 어떻게 분류할 것인지가 문제가 된다. 현대에 이르기까지 유럽의 유대인들은 자신들이 거주하고 있는 국가의 문화와 정체성을 일부 수용하면서도, 동시에 유대인 고유의 문화 또한 지켜가는 양상을 보였다. (Silberstein and Cohn, 1994; Shneer, 2004; Berkovitz, 2010) 이러한 점을 고려하지 않고 이민 시점의 국적에만 의거하여 유대계 성을 가진 사람들의 장기 지향성을 추정하는 것은 문제의 여지가 있다. 또한 이스라엘이 2차 세계 대전 종전 이후 건국되었음을 감안하면 더욱 그렇다. 그러나 1787년

오스트리아−헝가리 제국이 유대인으로 하여금 독일식 성을 갖도록 강제하는 법을 시행한 이후 많은 유대인들이 독일인들과 구별하기 어려운 성을 사용하고 있다는 점을 고려할 때, 유대인들이 많이 사용하는 성이라고 해서 그 성을 쓰는 사람을 유대인으로 판단하는 것은 위험하다. (Kaganoff, 1996) 또한, 높은 확률로 유대인이라고 판단되는 이민자라 할지라도 그가 거주하고 있던 국가의 문화적 영향 또한 배제할 수 없기에 이 사람에게 일괄적으로 이스라엘 국적을 부여하는 것 역시 옳지 않다. 이를 감안하여 본 연구에서는 유대계 성씨를 가진 이민자도 원칙적으로는 탑승자 명단에 적혀 있던 국적에 의거하여 장기 지향성 점수를 대응시켰다. 단, 국적 란에 Jew, Jewish, Hebrew 등 유대인과 관련된 정보만 기재되어 있는 탑승자는 이스라엘 국적을 부여하였다.

[표 3.1]은 이와 같은 기준에 의거하여, 본 표본의 대상이 된 미국 CEO들의 조상들이 이민 해 온 국가를 추정한 결과를 제시한다. 대부분의 성의 경우, 해당 성씨를 가진 이민자들이 여러 국가로부터 이민을 왔다. 이러한 경우, 특정한 성을 가진 사람의 조상이 어느 국가로부터 이민 온 것인지를 추정하는 과정은 필연적으로 오차를 동반한다. 이는 성씨와 장기 지향성 점수를 대응시키는 과정에서 매우 중요한 문제가 된다. 다만, [표 3.1]에서는 대략적인 분포를 보이는 것이 목적이기에 편의 상 가장 많은 이민자가 이민 온 국가를 기준으로 CEO의 성씨와 출신 국가를 대응시켰다. 단, 동일한 성씨 내에서 이민자의 30% 이상을 차지하는 출신 국가가 복수로 존재하는 경우, 이러한 성을 가진 CEO에게는 두 국적을 모두 부여하였다. [표 3.1]에 따르면, 영국에서 이주해 온 조상을 둔 것으로 추정되는 CEO의 비중이

가장 높으며, 독일, 아일랜드, 이탈리아, 스코틀랜드가 그 뒤를 따르는 것이 확인된다.

3.2.2. 장기 지향성 점수의 부여

GLOBE가 측정한 미래 지향성 점수는 미래에 대한 계획, 인내, 끈기, 절약 등을 가장 잘 포착하는 변수로 문화인류학자들에게 받아들여지고 있다. (Venaik et al., 2014) GLOBE는 62개국, 17,000명의 기업 관리자들을 대상으로 광범위한 설문 조사를 수행하여 도출되었다. [표 3.2]의 패널 A는 GLOBE가 미래 지향성 점수를 측정한 62개국 중 27개 국가의 장기 지향성 점수를 제시한다. 싱가포르가 연구 대상이 된 국가들 중 가장 미래(장기) 지향적인 문화를 가지고 있는 것으로 평가받았으며, 스위스, 덴마크, 캐나다, 일본 등도 장기 지향적인 문화를 가지고 있는 것으로 평가된다. 반면, 러시아, 아르헨티나, 이탈리아, 그리스, 태국 등은 가장 현재(단기) 지향적인 문화를 가지고 있는 국가들이다. GLOBE가 측정한 미래 지향성 점수는 국가의 1인 당 GDP와 약한 양의 상관 관계를 보인다. 전반적으로, 소득이 높은 국가에서 미래 지향적인 문화가 나타나는 경향이 있으나, 예외가 되는 국가들이 많이 존재한다. 예를 들어, 인도나 나이지리아는 1인 당 GDP가 낮지만 미래 지향적인 문화를 보유하고 있고, 반대로 프랑스나 이탈리아는 1인당 GDP가 높지만 현재 지향적인 문화를 가진 국가로 평가된다.

GLOBE는 세계의 국가들을 10개의 문화권으로 분류하고 있다. [표 3.2]의 패널 B는 각 문화권에 속하는 국가들의 미래 지향성 점수 평균을 제시한다. 독일계 유럽 문화권에 속한 국가들(오스트리아, 스위스, 네덜란드, 구 동독 지역, 구 서독 지역)과 북유럽 문화권에 속한 국가들에서 (덴마크, 핀란드, 스웨덴) 가장 미래 지향적인 문화가 형성되어 있다. 동아시아 유교 문화권 국가들(중국, 홍콩, 일본, 싱가포르, 타이완)과 영미권 국가들(호주, 캐나다, 아일랜드, 뉴질랜드, 남아프리카(백인), 영국, 미국)도 비교적 장기 지향적인 문화를 가지고 있다. 반면 동유럽 국가들(알바니아, 조지아, 그리스, 헝가리, 카자흐스탄, 폴란드, 러시아, 슬로베니아)은 가장 단기 지향적인 문화를 가지고 있다.

이와 같은 분포를 보이는 미래 지향성 점수를 미국 CEO들의 성과 대응시키기 위해 본 연구는 다음과 같은 전략을 이용한다. 우선, 각 성씨마다 이민자들의 출신국 비중을 구한다. 각각의 이민자들에 대하여 어느 국가 출신인지를 판단하는 기준에 대해서는 2.1. 절에서 설명하였다. 이후 각 성씨 별로, 해당 성을 가진 이민자의 1% 미만만이 가지고 있는 국적을 가진 이민자들은 제외한다. 이러한 절차를 밟는 이유는, 출신 국가가 잘못 기재되었거나 특이한 삶의 경험을 가진 이민자의 영향을 배제하기 위해서이다. 이후 남은 이민자들을 대상으로 하여, 동일 성씨 내 국적별 이민자 수를 기준으로 가중 평균하여 각 성마다 장기 지향 점수($LTOS$)를 부여한다. 예를 들어, Silva라는 성을 가진 이민자가 탑승객 명단 전체에 걸쳐 1,000명이 존재한다고 가정하자. 이 중 750명은 스페인에서, 245명은 브라질에서, 5명은 쿠바에서 왔다면 Silva라는 성에 대해 부여된 $LTOS$는 다음 식과 같은

방식으로 산출된다.

$$LTOS_{Silva} = \left(\frac{\text{스페인 국적 이민자 수}}{\text{국적이 콜럼비아인 이민자를 제외한 이민자 수}} \times \text{스페인의 미래 지향 점수}\right)$$

$$+ \left(\frac{\text{브라질 국적 이민자 수}}{\text{국적이 콜럼비아인 이민자를 제외한 이민자 수}} \times \text{브라질의 미래 지향 점수}\right)$$

$$= \left(\frac{0.75}{0.995} \times \text{스페인의 미래 지향 점수}\right) + \left(\frac{0.245}{0.995} \times \text{브라질의 미래 지향 점수}\right)$$

[그림 3.2]는 표본에 존재하는 CEO들의 $LTOS$ 분포를 보여준다. 전체 CEO의 절반 이상에게 4.05~4.3점 사이의 $LTOS$가 부여되었는데, 영국, 독일, 아일랜드, 인도, 일본 등의 GLOBE 미래 지향 점수가 이 구간에 속한다는 점을 감안할 때 이러한 결과는 자연스럽다. [그림 3.2]에서 확인할 수 있듯이 4.3점이 넘는 $LTOS$가 부여된 CEO의 비중은 높지 않다. 그러나 4점 이하의 $LTOS$가 부여된 CEO의 비중은 높아서, $LTOS$ 분포의 표준편차는 분석에 이용 가능할 정도로 충분히 크다. 기업-연도 관측치의 기초 통계량을 제시하는 [표 3.3]에 따르면, $LTOS$ 변수의 표준편차는 0.287인데, 이는 미국과 멕시코의 $LTOS$ 차이와 유사하다.

[표 3.2]의 패널 C는 각 산업 별로 CEO들의 $LTOS$에 차이가 있는지를 확인한다. 특정 산업에 장기 지향적인 문화권에서 이민 온 조상을 둔 CEO가 주로 분포한다면, 장기 지향성과 투자와의 상관관계가 관찰된다 하더라도, 그 관계를 인과 관계로 해석하기 어려워진다.

왜냐하면 관찰된 상관 관계가 실제로는 해당 산업의 특성으로 인해 기인한 것일 가능성이 존재하기 때문이다. [표 3.2]의 패널 C는 North American Industry Classification System 의 2-digit code를 이용하여 산업을 분류한 뒤, 각 산업에 속하는 기업 CEO들의 *LTOS* 평균을 제시한다. 그 결과 모든 산업에서 *LTOS*의 평균은 4.03~4.12로 측정되어, 산업 별 차이는 관찰되지 않았다. 따라서 본 연구에서 확인한 장기 지향성과 투자와의 상관 관계가 특정 산업의 특성에 의해 야기되었을 가능성은 낮다.

3.2.3 기초 통계량

본 연구의 표본은 다음의 절차를 통해 구성되었다. ExecuComp에서 CEO의 이름 전체를 얻을 수 있는 1992년~2017년 사이의 기업-연도 관측치는 47,666개이다. 이 중 총자산이나 매출액이 누락되어 있거나 음의 값을 갖는 경우는 표본에서 제외하였다. 또한 이민자 국가인 미국의 기업을 이용하여 선조로부터 계승된 장기 지향성과 투자와의 상관 관계를 분석하고자 하기에, 미국에 본사를 두고 있지 않은 기업들도 표본에서 제외하였다. 전술한 바와 같이 투자 의사 결정에 본 연구는 관심을 가지고 있기에 금융업 기업들과 유틸리티 산업 기업들 역시 제외되었다. 최종적으로 2,524개의 기업, 34,895개의 기업-연도 관측치가 표본에 포함되었다. 한편, 표본 내에서 CEO의 교체가 있었던 기업-연도 관측치는 3,766개가 있다. 이러한 관측치의 경우, 그 해에 이루어진 투자 의사 결정이 전임 CEO와 후임 CEO 중 누구에 의해

내려진 것인지 판별하기가 어려우므로 이후 이어지는 대부분의 분석에서 이 관측치들은 제외된다.

　　[표 3.3]은 본 연구에서 사용된 변수들에 대한 기초 통계량을 제시한다. 본 연구의 설명 변수인 *LTOS*는 성을 통해 포착한 CEO의 장기 지향성 점수를 의미한다. *LTOS*의 구체적인 측정 방법은 앞에서 설명하였다. 앞서 [그림 3.2]에서 확인한 것과 유사하게, *LTOS*의 평균은 4.156인데, 이는 미국의 GLOBE 미래 지향성 점수인 4.152와 유사하다. 65% 이상의 기업-연도 관측치들은 3.990 이상 4.250 이하의 *LTOS* 점수를 나타내고 있으며, 이 역시 [그림 3.2]에서 확인한 결과와 유사하다. *UA_H, PD_H, LTO_H*는 Hofstede(2001)의 문화 지표를 통해 구성된 변수들로써, 성을 통해 포착한 CEO의 불확실성 회피도, 권력 거리도, 장기 지향 정도를 각각 의미한다. 세 변수 모두 LTOS를 계산하기 위해 사용했던 것과 동일한 방법을 이용하여 구성되었으며, 대응된 점수가 GLOBE의 미래 지향성 점수가 아니라 Hofstede(2001)의 문화 지표들이라는 차이만 존재한다. GLOBE의 미래 지향성 점수와 Hofstede의 불확실성 회피도 및 권력 거리도 사이에는 약한 상관 관계가 존재하는 것으로 알려져 있어, 이 상관관계를 통제하기 위해 *UA_H*와 *PD_H*를 구성하였다. GLOBE와 Hofstede에서 측정하는 미래(장기) 지향성 사이에는 상관관계가 존재하지 않지만, (Hofstede et al., 2010) Hofstede의 미래 지향성 역시 미래에 대한 태도를 부분적으로 포착하고 있기에 LTO_*H*를 구성하여 *LTOS*와 함께 분석에 이용하고자 한다.

본 연구의 실증 분석에서는 투자의 규모나 빈도를 측정하는 변수들이 종속 변수로 이용된다. 우선, 자본적 지출과 관련하여서는 총자산 대비 자본적 지출의 비율을 나타내는 변수인 *CAPX_AT*가 종속 변수로 이용된다. 기업의 인수. 합병 활동과 관련된 변수들로는 *ACQ_AT*, *ACQ_Dummy*, *ACQ_more5*가 존재한다. *ACQ_AT*는 총자산 대비 인수. 합병 금액의 비율을 의미한다. *ACQ_Dummy*는 $1 백만 이상을 M&A 에 지출했으면 1, 아니면 0 의 값을 갖는 더미 변수이며, *ACQ_more5*는 총자산 대비 5% 이상의 금액을 M&A 에 지출했으면 1 의 값을 갖는 더미 변수이다. 이 변수들을 구성할 때, Fuller et al. (2002)의 방법론을 따라 피인수. 합병 기업의 지분을 50% 이상 획득한 인수. 합병만을 고려하였다. *RD_AT*는 총자산 대비 R&D 지출의 비율이며, *RD_Sales*는 매출액 대비 R&D 지출의 비율, *RD_Dummy*는 R&D 에 비용을 지출했으면 1 의 값을 갖는 더미변수이다. 인수. 합병의 규모와 관련된 자료는 Securities Data Corporation(SDC)의 Merger and Acquisition Database 로부터 수집하였으며, 나머지 필요한 정보는 모두 Compustat 에서 수집하였다.

본 연구의 실증 분석에서 고려된 기업의 특성 변수들은 다음과 같다. *Tobinq*는 Compustat 의 항목들을 다음과 같이 이용하여 구한 기업의 Tobin's Q 이다: [AT+(CSHO × PRCC_F)−CEQ]/AT. *FirmSize*는 총 자산의 자연 로그 값이며, *FirmAge*는 기업의 영업 년 수를 나타낸다. *OCF_AT*는 총자산 대비 영엽활동으로 인한 현금흐름의

비율이며, *Cash_AT* 는 총자산 대비 현금 및 현금성 자산의 비율로 정의된다. *NWC_AT* 는 총자산 대비 순운전자본의 비율, *SalesGrowth* 는 전년 대비 매출액 성장률, *LEVERAGE* 는 총자산 대비 부채 비율이다. 모든 기업 특성 변수들은 연도별로 1%와 99% 수준에서 winsorize 되어 특이값으로 인한 분석 결과의 왜곡을 방지하였다.

기업의 특성과 관련된 변수 이외에도 경기 사이클을 비롯한 거시 경제 여건과 투자와의 높은 상관관계를 고려하여, 다음과 같은 거시 변수들을 추가로 통제 변수로 활용하였다. *GDPGrowth* 는 전년도 대비 실질 GDP 의 성장률이다. *Election* 은 대통령/총리 선거와 기업의 투자 사이클의 관계에 대해 분석한 Julio and Yook(2006)에 근거하여 회계연도 말일을 기준으로 대통령 선거가 −60~+274 일 사이에 있을 때 1 의 값을 갖도록 구성한 더미 변수이다. *LogEPU* 는 Baker et al. (2016)이 정치적 불확실성을 측정하기 위해 사용했던 변수로서 신문 보도들의 기사에 등장하는 불확실성과 관련된 단어들을 이용하여 도출된다. *MacroUncertainty* 는 Jurado et al. (2015)이 거시 경제의 불확실성을 측정하기 위해 만들었던 변수로서 경제 시계열 자료들의 예측 오차를 이용한다.

조상으로부터 받은 문화적 영향 이외에도 CEO 의 다양한 개인적 특성들은 기업의 이사 결정에 영향을 미치는 것으로 알려져 있다. (Bertrand and Schoar, 2003; Benmelech and Frydman, 2015; Faccio et al., 2016) 따라서 본 연구에서는 다음과 같은 변수들을 이용하여

CEO 의 개인적 특성이 투자에 미치는 영향 또한 통제 하려 한다. *CEO_Female* 은 CEO 가 여성일 때 1 의 값을 갖는 더미 변수이며, *CEO_Tenure*는 CEO로서 재직하고 있던 기간을 나타낸다. *CEO_Age*는 CEO 의 나이이다. *CEO_Delta* 와 *CEO_Vega* 는 각각 주가에 대한 CEO 의 보수 민감도와 CEO 가 보유한 주식. 옵션 포트폴리오의 주식 변동성에 대한 민감도를 나타낸다. (Core and Guay, 2002) CEO 의 개인 특성과 관련된 변수들은 모두 ExecuComp 의 자료를 기반으로 구성되었다.

조상으로부터 물려받은 장기 지향성과 투자 의사결정이 보이는 관계의 인과성을 확립하기 위해, 다양한 추가적인 검증이 본 연구에서는 수행되었다. 그 중 한 가지는 창업자가 기업의 문화에 미치는 영향에 대해 보고했던 선행 연구들에 근거하여 (Pan et al., 2017), CEO가 동시에 창업자이기도 할 때 본 연구의 결과가 더 강하게 나타남을 보이는 것이었다. 이를 위해 구성한 *CEOFounder*는 창업자가 여전히 해당 회사의 CEO로 재직하고 있는 경우 1의 값을 갖는 더미변수이다. 이 변수는 다음과 같은 절차로 구성되었다. 우선, S&P 1500 기업을 대상으로 창업가 CEO의 자기과신(overconfidence)에 대해 연구한 Lee et al. (2017)의 자료로부터 필요한 정보를 얻었다. 잡지 Fortune에서는 2014년 이후 지속적으로 창업자가 CEO로 재직하고 있는 Fortune 500 기업에 대한 자료를 업데이트하고 있는데, 이를 Lee et al. (2017)의 자료에 보충하였다. 마지막으로, 창업가가 경영하는 기업들에 투자하는 ETF인 "Global-X Founder-Run Companies ETF (Ticker: BOSS)"의 투자 종목 목록을 이용하여 자료를 보완하였다. 그 결과, 전체 표본의

약 55.3%에 해당되는 1,814개 기업, 19,322개의 기업−연도 관측치에 대해 창업자의 CEO 재직 여부를 확인할 수 있었다.

또 다른 분석에 활용되었던 *SameContinent_FirstName* 변수는 다음과 같이 구성되었다. GLOBE Project에서는 10개의 문화권으로 세계 각국의 문화를 분류하고 있다. 미국이 영미권(Anglo) 문화권으로 분류되고 있음을 감안하여 성씨가 영미권 출신으로 분류되는 CEO들을 제외한 뒤, 나머지 CEO들을 대상으로 그들의 성씨와 이름(First Name)이 같은 문화권에 속하는지를 판별하였다. 예를 들어, Thomas Milosevic라는 이름을 가진 사람은 동유럽 계통의 성씨를 가지고 있지만 영미권 이름을 가지고 있기에 성과 이름의 문화권이 일치하지 않는다. 이러한 경우 *SameContinent_FirstName* 변수는 0의 값을 갖는다. 반면, Roberto Coppola라는 사람은 성씨와 이름 모두 라틴계이기에 해당 변수가 1의 값을 갖는다. 이 변수를 구성한 이유는, 본인의 이름과 성씨가 같은 계통으로 분류되는 CEO는 그렇지 않은 CEO들에 비해 조상들의 문화적 전통이 강한 가정 환경에서 자랐을 가능성이 높다고 판단하였기 때문이다. (Klamer, 2013)

마지막으로, 이민 1세대 여부를 확인할 수 있는 CEO들로 구성된 부표본 분석에 사용하기 위해 구성된 *Immigrant* 변수가 존재한다. 이 변수는 CEO 본인이 이민 1세대이면 1, 아니면 0의 값을 갖는 더미변수이다. 조상으로부터 계승되어 온 문화적 전통은 세대가 바뀌면서 점차 약화된다. (Light 1984; Berry and Sabatier, 2010;

Schwartz et al, 2012) 이민 1세대 CEO는 자신의 모국에서 성장했기에 그 사회의 문화가 사고 방식 형성에 크게 영향을 미칠 것이다. 그러나 이민 4세대 CEO의 경우 그 영향이 제한적일 것이다. 따라서 성씨를 통해 포착한 조상으로부터 물려받은 장기지향성이 CEO의 의사 결정에 미치는 영향은 그 CEO가 이민자일 때 가장 강하게 나타날 것이다. 2015년과 2016년 Fortune은 Fortune 500 기업 중 CEO가 외국 출신인 기업 목록을 발표 했었다. 각각 73개와 74개의 기업이 이 목록에 포함되었다. 이 자료로부터 출발하여, 1992년부터 2017년까지의 기간 동안 483개 기업 전현직 CEO들의 이민자 여부를 판별할 수 있었다. 이 부표본을 이용하여 수행된 분석 결과, 본 연구의 결과는 이민자 CEO를 둔 기업에 의해 주로 야기됨을 확인할 수 있었다.

3.3. 실증분석

3.3.1 장기 지향성과 투자

본 절에서는 성을 통해 포착한, 조상으로부터 계승된 CEO 의 장기 지향성과 기업의 투자 간 관계를 분석한다. 이를 위해 우선, 기업의 총자산 대비 자본적 지출을 나타내는 $CAPX\_AT$ 를 종속 변수로 두고, 장기 지향성 점수인 $LTOS$ 로 사용하는 패널 분석을 [표 3.4]에서 수행한다. Mueller (1972) 이래 많은 선행연구들은 기업이 성숙해지면서 점차 투자 기회가 감소하는 것을 보고해 왔고, 이를 반영하여 모든 식에서는 기업의 규모를 나타내는 변수인 $Size$ 와 기업의 영업 년 수를

나타내는 *FirmAge* 가 통제된다. 식 (1)은 오로지 그 두 변수만을 통제변수로 활용하였으며, 이후 식 (2)-(5)는 기업의 자본적 지출에 영향을 미치는 것으로 알려진 기업 특성 변수들을 추가로 통제하였다. 기업의 투자 기회를 포착하는 것으로 알려진 Tobin's q 와 (Lang et al., 1989; Denis, 1994) 매출액 성장률 (Lang et al.,1996)이 포함되었으며, 현금 흐름과 투자와의 높은 상관관계를 고려하여 총자산 대비 영업 이익인 *OCF_TA* 도 함께 통제된다. (Fazzari et al., 1988; Kaplan and Zingales, 1997) 이외에도 기업의 부채 비율 (McConnell and Servaes, 1995; Lang et al., 1996), 총자산 대비 순운전 자본의 비율 (Fazzari and Peterson, 1993), 총자산 대비 현금 비율 (Opler et al., 1999) 역시 투자 의사 결정에 영향을 미치는 요인이기에 통제 변수로 회귀식에 포함된다.

한편, 식 (1)- (3)은 산업 고정 효과와 연도 고정 효과를 함께 고려하고 있으며, 식 (4)-(5)는 산업 고정 효과만을 고려하는 대신 투자 의사 결정에 영향을 미치는 거시 경제 변수들과 불확실성 변수가 추가로 통제된다. 거시 변수로는 전 년도 대비 실질 경제성장률인 *GDPGrowth* 와 대통령 선거 유무를 나타내는 *Election* 더미 변수가 포함된다. (Juilo and Yook, 2012) 불확실성을 통제하기 위해 식 (4)에서는 Baker et al.(2016)이 제안한 불확실성 지표 EPU 의 로그 값인 *logEPU* 가 사용되었으며, 식 (5)에서는 Jurado et al.(2016)이 개발한 불확실성 지표 *MacroUncertainty* 를 사용하였다.

마지막으로, 식 (3)- (5)는 다음과 같은 CEO 들의 개인적 특성들을 추가로 통제한다: CEO 의 성별(CEO_Female), CEO 의 재직 년 수 (CEO_Tenure), CEO 의 나이 (CEO_Age), CEO 보수의 주가에 대한 민감도 (CEO_Delta), CEO 의 주가 변동성에 대한 부의 민감도 (CEO_Vega). 여성 CEO 는 남성 CEO 에 비해 과신(overconfidence)하는 경향이 적어 위험을 감수하는 행위를 적게 한다. (Faccio et al., 2016) CEO 의 나이 (Yim, 2013; Serfling, 2014), CEO 의 재직 년 수 (Hambrick and Fukutomi, 1991; Baker III and Mueller, 2002), CEO 의 위험 감수 유인 (Core and Guay, 2002)과 투자와의 상관 관계도 많은 선행 연구들에 의해 검증되어 있다. 기업- 연도별 이중군집표준오차(double-clustered standard error by firm and year)를 사용하여 한 기업의 서로 다른 시점의 오차들이 서로 상관 관계를 갖는 문제와 같은 연도의 서로 다른 기업의 오차들이 상관 관계를 갖는 문제를 통제하였다. (Thompson, 2011)

CEO 의 장기 지향성과 자본적 지출 간 상관 관계를 분석한 [표 3.4]의 모든 식은 $CAPX\_AT$ 와 $LTOS$ 사이의 유의한 상관 관계를 보고하고 있다. 기업의 현금 흐름과 투자 기회를 통제하였을 때에도 양 변수 간 상관 관계는 5% 수준에서 유의하며 (식 (2)-(5)), CEO 의 개인적인 특성을 고려해주어도 결과는 변하지 않는다. (식(3)- (5)) 연도 고정 효과 대신 거시 경제 변수를 통제해주었을 때에도 $LTOS$ 가 높은 CEO 가 재직하고 있는 기업의 총자산 대비 자본적 지출은 다른 미국의 상장 기업들보다 높다.

앞서 [표 3.2]의 패널 B 에서 독일계 유럽 국가들의 미래 지향성 점수 평균은 4.404 점이었으며, 라틴계 유럽 국가들의 미래 지향성 점수 평균은 3.678 점이었다. 이 차이와 [표 3.4]의 결과를 함께 고려할 때, 라틴계 유럽에서 이민 온 조상을 둔 CEO 가 재직 중인 기업에 비해 독일계 혈통 CEO 가 재직 중인 기업의 $CAPX\_AT$ 는 다른 요인들이 통제된 가운데 0.31~0.46 더 높다. [표 3.3]의 기초 통계량에서 표본 내 기업들의 $CAPX\_AT$ 평균은 6.588 이었으며, 이를 감안하면 독일계 CEO 가 재직하고 있는 기업은 라틴 유럽계 CEO 가 재직하고 있는 기업보다 약 5~7% 정도 더 총자산에 대비하여 투자를 많이 하는 것이다.

유사한 상관관계는 자본적 지출 대신 인수. 합병이나 R&D 에서도 동일하게 관찰된다. [표 3.5]는 기업의 인수. 합병 활동과 장기 지향성 점수 $LTOS$ 간 상관 관계를 보고한다. 식 (1)− (4)의 종속 변수인 ACQ_AT 는 총자산 대비 인수. 합병 금액의 비율이다. 식 (5)와 (7)의 종속 변수인 ACQ_Dummy 는 $1 백만 이상을 M&A 에 지출했으면 1, 아니면 0 의 값을 갖는 더미 변수이며, 식 (6)과 (8)의 종속 변수인 ACQ_more5 는 총자산 대비 5% 이상의 금액을 M&A 에 지출했으면 1 의 값을 갖는 더미 변수이다. 식 (1)−(6)은 OLS 회귀 분석의 결과이며, 식 (7)−(8)에서는 로지스틱 회귀 분석을 수행하였다. 식 (1)− (3)은 산업 고정 효과와 연도 고정 효과를 함께 고려하고 있으며, 식 (4)−(8)은 산업 고정 효과만을 고려하는 대신 거시 경제

변수들과 불확실성 변수를 포함한다. 포함된 거시 변수는 [표 3.4]의 식 (4)-(5)와 동일하며, Baker et al. (2016)이 제안한 $logEPU$를 통해 불확실성을 통제한다. 식 (3)- (8)에서는 <표 4>의 식 (3)-(5)에서 사용된 것과 동일한 CEO 특성 변수들이 추가로 통제된다.

[표 3.5]의 식 (1)-(4)는 총자산 대비 인수. 합병에 투자한 금액의 비율과 성을 통해 포착한 장기 지향성 사이의 유의한 양의 상관 관계를 보고한다. 기업의 특성들이 통제된 식 (2)-(4)에서 $LTOS$의 계수는 모두 5% 수준에서 통계적으로 유의하다. [표 3.2]에서 라틴 유럽계 CEO 와 독일계 CEO 의 $LTOS$ 차이는 0.726 이었으며, 이를 고려할 때 라틴 유럽계 CEO 가 재직중인 기업에 비해 독일계 혈통의 CEO 가 재직 중인 기업의 ACQ_AT 는 약 0.41~0.58 더 높다. [표 3.3]에 따르면 총자산 대비 인수. 합병 지출 비용인 ACQ_AT 의 평균은 약 2.54 인데, 앞의 결과와 이를 함께 고려하면 독일계 혈통의 CEO 가 재직 중인 기업은 라틴 유럽계 CEO 가 재직 중인 기업보다 총자산에 대비하여 약 16~23% 정도 더 투자를 많이 하고 있는 것이다.

[표 3.3]에 따르면, 인수. 합병 활동이 있을 때 1 의 값을 갖는 더미 변수인 ACQ_Dummy 의 평균은 0.164 이다. 이는 평균적으로 미국 기업이 6 년에 한 번 정도 인수. 합병을 한다는 것을 보여준다. 인수. 합병이 매년 발생하는 일이 아니기에, [표 3.5]의 식 (5)와 (7)은 $1 백만 이상의 인수. 합병이 있을 때 1 의 값을 갖는 ACQ_Dummy 를 종속 변수로, 식 (6)과 (8)은 총자산 대비 5% 이상의 금액을 인수.

합병에 투자 했을 때에만 1 의 값을 갖는 더미 변수인 ACQ_more5 를 종속 변수로 사용하여 유사한 분석을 수행했다. 그 결과 [표 3.5]의 식 (1)−(4)와 마찬가지로, 종속변수들과 장기 지향성 점수 $LTOS$ 사이의 양의 상관 관계가 관찰이 된다.

마지막으로, [표 3.6]에서는 R&D 투자와 관련된 종속 변수들을 이용하여 <표 4> 및 [표 3.5]와 동일한 분석을 수행한다. 식 (1)−(3)의 종속 변수인 RD_AT 는 총자산 대비 R&D 지출 비용의 비율이다. 식 (4) 의 종속 변수인 RD_Sales 는 매출액 대비 R&D 지출 비용의 비율이며, 식 (5)의 종속 변수인 RD_Dummy 는 R&D 에 비용을 지출했으면 1 의 값을 갖는 더미 변수이다. 식 (1)−(4)는 OLS 회귀 분석의 결과이며, 식 (5)에서는 로지스틱 회귀 분석이 수행되었다. 특정 통제 변수의 포함 여부에 상관 없이 [표 3.6]은 R&D 와 성을 통해 포착한 장기 지향성 간 일관된 양의 상관 관계를 보고하고 있다. [표 3.4]~[표 3.6]의 결과는 CEO 의 장기 지향성 점수 $LTOS$ 와 각종 투자 간 일관된 양의 상관 관계를 제시한다.

3.3.2. 추가 분석

성을 통해 추정한, 부계 혈통을 통해 전승된 CEO 의 장기 지향성과 각종 투자 간 양의 상관 관계는 일관되게 통계적으로 유의하게 관찰되지만, 이 결과에만 의거하여 양자 간 관계를 인과관계로

해석하기는 어렵다. 문화는 집단 내에 속하는 구성원들의 사고 형성에 깊은 영향을 미치는 정신의 소프트웨어(software of the mind)이기에 (Hofstede et al., 2010), 문화를 통해 경제적 행위를 설명하는 데에는 극심한 내생성 문제가 따른다. (Luiz, 2015) 이 문제를 극복하고자 본 연구는 다양한 강건성 검증을 추가한다.

[표 3.7]에서는 성을 통해 포착한 CEO의 장기 지향성과 기업의 각종 투자 간 상관 관계가 이민 1세대 CEO에게서 더 강하게 나타나는지 확인한다. 조상으로부터 계승되어 온 문화적 전통이 세대가 바뀌면서 점차 약화됨을 감안할 때 (Light 1984; Berry and Sabatier, 2010; Schwartz et al, 2012), 장기 지향성과 투자와의 관계가 인과 관계라면, 양자 간 양의 상관 관계는 1세대 이민자가 CEO로 재직하고 있는 기업에서 더 강하게 나타날 것이다. 이를 위해 앞서 2절에서 언급한대로 2015년과 2016년 Fortune 500의 발표에 근거하여 CEO의 이민자 여부를 판별할 수 있는 부표본을 설계하였다. 이후 이 부표본을 이용하여, 장기 지향성이 높은 성씨를 가진 CEO들에게 1의 값을 부여하는 더미 변수 *High_LTOS*와 이민 1세대 CEO들에게 1의 값을 부여하는 더미 변수 *Immigrant*, 그리고 양 변수의 교차항을 통제 변수로 포함하는 DiD(Difference-in-Differences) 분석을 수행하여 가설을 검증한다. 사전에 예측한 결과는 *Immigrant*와 *High_LTOS* 변수의 교차항의 계수가 유의한 양의 값을 갖는 것이다.

[표 3.7]의 식 (1)- (2)에서는 총자산 대비 자본적 지출의 비율인 *CAPX_AT* 가 종속 변수로 사용된다. 식 (3)-(4)에서는 총자산 대비 인수. 합병 금액인 *ACQ_AT* 가 종속 변수이며, 식 (5)-(6)의 종속 변수인 *RD_AT* 는 총자산 대비 R&D 지출 비용의 비율이다. 식 (1), (3), (5)는 [표 3.4]~[표 3.6]에서의 결과가 이 부표본에서도 반복되는지를 확인하기 위해 작성되었다. [표 3.7]의 부표본은 전체 표본의 약 20%에 불과하기에, 식 (1), (3), (5)에서 *LTOS* 계수의 통계적 유의성은 [표 3.4]~[표 3.6]에서보다 다소 약화되었으나, 여전히 양의 값을 갖는다. 한편, *Immigrant* 와 *High_LTOS,* 그리고 양자 간 교차항을 *LTOS* 대신 이용한 식 (2), (4), (6)에서는 사전에 예측했던 것과 동일하게 교차항의 계수가 통계적으로 유의한 양의 값을 갖는다. 이는 장기 지향성과 투자 간 양의 상관 관계가 이민 1 세대 CEO 들에게서 더 강하게 나타남을 보여준다.

[표 3.8]에서는 성을 통해 포착한 CEO 의 장기 지향성과 기업의 각종 투자 간 상관 관계가 성과 동일한 문화권에서 유래한 이름(First Name)을 사용하는 CEO 에게서 더 강하게 나타나는지 확인한다. 전통 문화를 자식에게 계승하려는 부모의 노력이 작명에 반영된다는 기존 연구에 근거하여(Fryer and Levitt, 2004), 성과 이름이 같은 문화권에서 유래한 CEO 의 경우 그들의 부모가 조상의 문화를 그들에게 전수하려는 노력을 더 기울였을 것이란 추론이 가능하다. 이를 기반으로, 이런 CEO 들에게서 장기 지향성과 투자 간 상관 관계가 더 강하게 나타날 것이라 가설을 세웠다. 단, 영국, 스코틀랜드, 아일랜드 등 영미 문화권에서 유래한 성을 가진 CEO 들은 이 분석에서 제외되었는데,

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왜냐하면 이들은 거의 예외 없이 영미식 이름을 사용하고 있기 때문이다. 영미문화권의 성을 가진 CEO 들을 제외한 부표본을 이용하여 다음과 같은 분석이 수행되었다. *SameContinent_FirstName* 은 CEO 의 성(Last Name)과 이름(First Name)이 같은 문화권에서 유래했을 때 1 의 값을 갖는 더미 변수이다. 이 변수와 *LTOS, 그리고 양 변수의 교차항*을 통제 변수로 포함한 회귀 분석을 통해, 교차항의 계수가 통계적으로 유의한 양의 값을 갖는지를 관찰함으로서, 이름과 성이 동일한 문화권에서 유래한 CEO 들에게서 장기 지향성과 투자 간 상관관계가 더 강하게 나타나는지를 관찰한다.

[표 3.8]의 식 (1)- (2)에서는 총자산 대비 자본적 지출의 비율인 *CAPX_AT* 가 종속 변수로 사용된다. 식 (3)-(4)에서는 총자산 대비 인수. 합병 금액인 *ACQ_AT* 가 종속 변수이다. 식 (1)과 식 (3)은 이 부표본 내에서 [표 3.4]~[표 3.6]의 결과가 유지됨을 보여준다. 식 (2)와 식 (4)에서는 예측대로, 성과 이름이 동일한 문화권에서 유래한 CEO 들에게서 자본적 지출 (또는 인수. 합병)과 장기 지향성 간 상관 관계가 더 강하게 나타남을 확인한다. 본 논문 내에 결과를 보고하지는 않았으나, R&D 비용 지출 여부를 나타내는 *RD_Dummy* 를 종속 변수로 둔 분석에서도 동일한 결과가 관찰된다.

여러 선행 연구들은 창업자가 기업의 문화의 형성에 영향을 미치고, 그 영향이 상당한 시간이 지난 후에도 기업의 투자에 영향을 끼침을 보고해 왔다. (Pan et al., 2017) 이러한 결과에 근거하여 [표

3.9]에서 검증할 가설은 다음과 같다. CEO 가 동시에 창업자이기도 한 기업이라면 CEO 가 기업의 의사 결정에 미치는 영향이 더 강할 것이기 때문에, 창업자 CEO 가 재직하고 있는 기업에서 장기 지향성 점수 $LTOS$ 와 투자 간 상관 관계가 더 강하게 나타날 것이다. 이 가설을 검증하기 위해 구성한 $CEOFounder$ 는 창업자가 여전히 해당 회사의 CEO 로 재직하고 있는 경우 1 의 값을 갖는 더미변수이다. 2 절에서 전술한 대로, 창업자 CEO 여부는 다양한 출처의 자료를 이용하여 식별하였다. 결과적으로 창업자 CEO 여부를 확인할 수 있었던 표본은 전체 표본의 약 절반에 해당하는 17,026 건이다. [표 3.8]과 유사하게 $LTOS$와 $CEOFounder$, 그리고 양 변수의 교차항을 포함시킨 패널 회귀 분석을 통해 가설을 검증한다. 사전적으로 예측되는 결과는 $LTOS$ 와 $CEOFounder$ 교차항 계수가 통계적으로 유의한 양의 값을 갖는 것이다.

　　　위 가설의 분석 결과는 [표 3.9]에서 확인된다. 예측했던 결과는 인수. 합병과 관련된 변수들을 종속 변수로 이용할 때나, R&D 와 관련된 변수들을 종속 변수로 이용할 때에는 관찰되지 않았다. 그러나 유형자산에 대한 투자를 측정하는 $CAPX\_AT$ 를 이용할 때에는 예측되었던 결과가 관찰된다. 식 (1)은 [표 3.4]의 결과가 본 표본 내에서도 유지되는지를 확인하는데, 절반 이상의 표본이 제외된 여파로 $LTOS$ 변수의 계수는 통계적으로 유의하지 않다. 그러나 $LTOS$ 와 $CEOFounder$, 그리고 양 변수의 교차항을 포함시킨 식 (2), (4), (6)에서 교차항은 통계적으로 유의한 양의 값을 갖는다. 또한, 식 (3), (5), (7)은 $LTOS$ 와 $CEOFounder$ 없이 양 변수의 교차항만을 설명변수로 이용하는데, 이는 창업자 CEO 가 재직하고 있는 기업에서

CEO 의 장기 지향성 점수가 높아질 때 총자산 대비 투자가 늘어나는 정도를 보여준다. 식, (3), 식 (5), 식 (7)에서 교차항의 계수는 1% 수준에서 통계적으로 유의하다. 결과적으로, 자본적 지출을 종속 변수로 이용할 때에는 본 연구의 예측과 부합한 결과가 관찰된다.

마지막으로 [표 3.10]에서는 성을 통해 포착한 CEO 의 장기 지향성과 기업의 각종 투자 간 상관 관계가 Hofstede(2001)에서 제시한 다른 문화적 차원을 통제한 가운데서도 유지되는지 확인한다. 식 (1)−(4)에서는 총자산 대비 자본적 지출의 비율인 $CAPX\_AT$ 가 종속 변수로 사용된다. 식 (5)−(6)에서는 총자산 대비 인수. 합병 금액인 ACQ_AT 가 종속 변수이며, 식 (7)−(8)의 종속 변수인 RD_AT 는 총자산 대비 R&D 지출 비용의 비율이다. Pan et al. (2020)은 본 연구처럼 다양한 형태의 투자를 고려하지는 않았지만, 본 연구의 종속 변수 중 하나인 기업의 인수. 합병 활동과 Hofstede 의 불확실성 회피 지수 사이의 상관 관계를 보고하고 있다. 본 연구의 설명 변수인 $LTOS$ 는 GLOBE 의 미래 지향성 점수를 바탕으로 구성되었으며, 이 점수는 Hofstede 의 불확실성 회피 지수가 포착하고 있지 않은 개인의 시간 선호를 측정한다고 서론에서 언급한 바 있다. 그러나 Hofstede et al. (2011)은 GLOBE 의 미래 지향성 점수가 자신들의 불확실성 회피 지수나 권력 거리 지수와 상관 관계가 있음을 보고한 바 있다. 또한 Hofstede 는 GLOBE 의 미래 지향성 점수와 이름이 유사한 장기 지향성 지수를 따로 측정하고 있기도 하다. 따라서 [표 3.10]을 통해, 이런 Hofstede 의 문화 차원들을 함께 설명 변수로 이용해도 본 연구의 결과가 유지되는지를 검증하였다. 그 결과, 자본적 지출과 R&D 는

Hofstede 지표들의 추가 여부와 상관 없이 장기 지향성과의 양의 상관 관계가 유지되었으며, 인수. 합병의 경우 10% 유의 수준을 소폭 벗어나는 수준에서 장기 지향성 점수와 양의 상관 관계를 가졌다.

종합적으로, [표 3.7]~ [표 3.10]에서 수행된 다양한 분석에서도 장기 지향성 점수와 투자 간 양의 상관 관계는 지속적으로 유지되었다. 이러한 추가적인 분석의 결과는 조상으로부터 전승된 문화가 CEO 의 의사 결정에 영향을 미친다는 본 연구의 가설을 지지한다.

3.4. 결론

뉴욕 항을 통해 1820년부터 1957년 사이에 미국으로 이민 온 입국자들에 관한 정보를 이용하여, 본 연구는 미국 CEO들의 조상들이 어느 국가로부터 이민 온 것인지를 추정하였다. 그리고 문화가 경험과 학습을 통해 먼 세대의 후손들에게도 영향을 미친다는 선행 연구들에 근거하여(Bisin and Verdier, 2000; Guiso et al., 2016), 장기 지향적인 문화를 가진 국가에서 조상들이 이주해 온 것으로 추정되는 CEO들이 통계적으로 유의하게 1) 자본적 지출을 더 많이 하고, 2) 인수. 합병을 더 많이, 자주 하며, 3) R&D에도 더 많은 비용을 지출한다는 것을 확인했다. 이러한 결과는 창업자 CEO, 이민 1세대 CEO, 성과 이름이 동일한 문화권 출신인 CEO에게서 더 강하게 나타났으며, 이는 본 연구의 예측과 부합한다.

본 연구는 이민자 국가인 미국이나 캐나다, 호주 등을 대상으로
하여 조상으로부터 전승된 문화적 전통과 기업의 의사 결정 간 상관
관계를 분석하려는 최신 연구들과 유사한 주제 의식을 공유한다. (Liu
2016; Nguyen et al., 2018; Pan et al., 2017, Brochet et al., 2019) 그
중에서도 Pan et al. (2020)은 본 연구와 마찬가지로 뉴욕 항을 통해
입국한 이민자들을 통해 CEO 조상들의 출신 국가를 추정하는 식별
전략을 구사했다. 그럼에도 불구하고 본 연구를 기존 연구들과
차별화하는 부분이 존재한다. 문화적 요인을 접목시킨 기존 재무 분야의
연구들은 Hofstede (2001)의 문화 차원에 크게 의존하였으며, 특히 그
중에서도 불확실성 회피 지수(Uncertainty Avoidance Index)에만
주목했다. 불확실성 회피 지수는 불확실성(uncertainty)과
모호성(ambiguity)을 명확히 구별하지 않은 채, 이 두 가지 위험
요인에 대한 해당 국가의 인내도를 측정한다. 반면 이 지수는 할인율을
결정하는 또 다른 중요한 요인인 시간 선호(time preference)를
측정하는 지표가 아니다. Hofstede(2001)의 장기 지향성 지수는 과거
전통에 대한 존중 등을 측정하기에, 시간 선호를 측정한다고 보기
어렵다. 이러한 이유로 인해 Hofstede의 장기 지향성 지수는 그 동안
재무 분야의 연구에서 크게 주목을 받지 못 했다. 반면 GLOBE의 미래
지향성 점수는 미래의 이익을 위해 현재 얼마나 큰 희생을 할 수
있는지를 주로 측정하기에, 개념적으로 시간 선호의 정도를 포착한다.
물론 GLOBE의 설문 조사는 경제학자들에 의해 수행된 것이 아니고,
따라서 GLOBE의 미래 지향성 점수가 온전히 시간 선호를 측정한다고
보기는 어려울 것이다. 그러나 적어도 부분적으로 이 지표는 각 국가 별

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시간 선호의 차이를 포착하고 있으며, 이러한 차이는 개인의 주관적인 시간 할인율이 결정됨에 있어 영향을 미칠 것으로 예측된다. (Baumol and Quandt, 1965) 그리고 다양한 투자에서 일관되게 관찰되는 *LTOS*와 투자 규모 간의 상관관계는 이 예측을 뒷받침한다.

　　　재무 경제학에서 잘 다루어지지 않았던 데이터베이스를 이용하여 시간 선호 및 장기 지향성과 관련된 국가 별 문화 차이를 측정한 것 외에도 이 연구는 다음과 같은 방식으로 기존 연구들에 기여한다. 첫 째, 활발하게 새로운 연구들이 진행되고 있지만, 아직 문화적 전통을 기업 재무 분야에 접목시킨 연구는 그 수가 부족하며, 탐구된 분야도 제한적이다. (Karolyi, 2016) 본 연구는 이러한 주제를 대상으로 연구를 진행하여, 다양한 유형의 투자 활동에 일관되게 영향을 미치는 문화적 요인의 존재를 실증한 의의가 있다. 둘째, 본 연구의 방법론과 발견은 경영진이나 이사회와 관련된 흥미로운 후속 연구들에도 적용될 수 있다. 서로 다른 문화권으로부터 조상들이 이민 온 사람들로 구성된 경영진이나 이사회를 둔 기업은 그렇지 않은 기업들에 비해 성과가 더 좋은가? CEO와 CFO가 장기지향성이 상이한 문화권으로부터 조상들이 이민 온 경우, 기업의 재무 활동은 누구의 영향을 더 받을 것인가? 빠르게 성장하는 기업은 새로운 CEO를 선임할 때 장기 지향성이 높을 것으로 추정되는 사람을 더 선호할 것인가? 본 연구의 분석은 이런 다양한 연구들에 응용될 수 있어 의의를 갖는다.

[Table 1.1] Description of variables

This table presents the definitions of the variables used in this study. All continuous variables are winsorized at the 1st and 99th percentile by year.

Variables	Description
Dependent Variables	
SEOVol_raw	Amount of seasoned equity offerings (KRW in billions)
SEOVOL_TA	Amount of seasoned equity offerings divided by total assets (%)
SEOVol	Natural logarithm of (1+Amount of seasoned equity offerings)
SEO_Dummy	Dummy variable equals 1 if there is a seasoned equity offering and 0 otherwise
Investment_TA	Cash flows from investing activities divided by total assets (%)
IncDebt_TA	Increase in short- and long-term financial liabilities divided by total assets (%)
Main Explanatory Variables	
AfterCarve	Dummy variable equals one, if within five years of *Ausgliederung*, and 0 otherwise.
AfterCarve7	Dummy variable equals one, if within seven years of *Ausgliederung*, and 0 otherwise.
AfterCarve10	Dummy variable equals one, if within ten years of *Ausgliederung*, and 0 otherwise.
Other Control Variables	
TotalAsset	Total Assets (KRW in billions)
Size	Natural logarithm of (1+Total assets)
FirmAge_raw	The difference between the current year and the founding year (Number of years of operations)
FirmAge	Natural logarithm of (1+Number of years of operations)
Tangibility	Tangible Assets divided by total assets (%)
Profitability	Operating income divided by total assets (%)
Cash_to_Assets	Sum of the cash, cash equivalents, and marketable securities divided by total assets (%)
Leverage	Total liabilities divided by total assets (%)
CAPEX_to_PPE	Capital expenditure divided by tangible assets (%)
Market_to_Book	Market value per share divided by book value per share

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OCF_TA	Cash flows from operating activities divided by total assets (%)
Sales Growth Rate	Percentage increase in sales revenue compared to the prior year
High_Q	Dummy variable equals one if Tobin's q of a firm is within the top 30% as of year and 0 otherwise.
High_T_Ind	Dummy variable equals one if a firm belongs to an industry with top 30% tangibility as of the year and 0 otherwise.
High_I_Ind	Dummy variable equals one if a firm belongs to an industry with top 30% investment to assets as of the year and 0 otherwise.

[Table 1.2] Descriptive statistics

Panel A presents descriptive statistics for the entire sample. Although the sample comprised firms listed on the KOSPI and KOSDAQ from 2000 to 2020, the following firms are excluded for research purposes: firms with capital impairment, firms with omitted or negative total assets or sales revenue, special purpose acquisition firms (SPAC), real estate investment trusts (REITs), and firms belonging to the finance or insurance industry (firms belonging to 64 to 66 in the 2-digit Korean Standard Industrial Classification Code). In Panel C, the firm characteristics as of the year immediately before the *Ausgliederung* are shown only for the firms that have implemented an *Ausgliederung*. *CSFirm* is a dummy variable with a value of 1 when a controlling shareholder exists and 0 if not. *BG* is a dummy variable with a value of 1 when a firm has an affiliate in Korea. *LBG1* is a dummy variable with a value of 1 when other listed firms belong to the same business group, and LBG2 is a dummy variable with a value of 1 when the firm belongs to a large business group as defined by the Korea Fair Trade Commission. *Layer* is a variable indicating the floor at which the firm is located under the pyramid of the business group. *VR* is a variable representing the voting rights of the controlling shareholder, and *CFR* means the cash flow rights of the controlling shareholder. *RelSize* refers to the newly established subsidiary's total assets relative to the parent firm's total assets immediately after the *Ausgliederung*. Other variables are defined in Table 1.

Panel A: Descriptive statistics for the entire sample							
VARIABLES	N	mean	p10	p25	p50	p75	p90
Dependent Variables							
SEOVol_raw	32,804	4.48	0	0	0	0	5.00
SEOVol_TA	32,804	4.84	0	0	0	0	8.94
SEOVol	32,804	0.35	0	0	0	0	1.79
SEO_Dummy	32,804	0.15	0	0	0	0	1
Investment_to_Assets	32,804	10.45	-3.80	0.75	5.28	13.08	27.74
						(Continue on Next Page)	

VARIABLES	N	mean	p10	p25	p50	p75	p90
IncEqui_TA	32,804	6.23	0	0	0	0.38	13.79
IncDebt_TA	32,804	26.06	0	0.36	10.55	33.06	70.27
Main Explanatory Variables							
AfterCarve	32,804	0.03	0	0	0	0	0
AfterCarve7	32,804	0.04	0	0	0	0	0
AfterCarve10	32,804	0.05	0	0	0	0	0
Control Variables							
TotalAsset	32,804	793.50	25.77	48.54	102.89	265.80	813.22
Size	32,804	4.87	3.29	3.90	4.64	5.59	6.70
FirmAge_raw	32,804	27.82	9	15	24	39	51
FirmAge	32,804	3.13	2.20	2.71	3.18	3.66	3.93
Tangibility	32,804	27.80	2.97	12.39	25.85	40.58	54.62
Profitability	32,804	4.22	-4.76	0.77	4.07	8.47	14.01
Cash_to_Assets	32,804	7.83	0.44	1.71	4.89	10.67	19.15
Leverage	32,804	40.04	13.22	24.08	40.05	54.92	66.25
Debt_to_Assets	32,804	20.16	0.00	3.94	17.84	32.55	44.48
CAPEX_to_PPE	31,433	33.21	-10.69	-2.30	4.17	22.63	73.11
Market_to_Book	30,440	1.15	0.43	0.60	0.97	1.29	2.08
OCF_TA	32,804	4.49	-6.71	-0.51	4.50	9.90	16.10
Sales Growth Rate	31,251	24.79	-23.38	-7.02	5.02	19.21	44.61

Panel B: Pairwise Correlation between variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) *SEOVol_TA*	1.00										
(2) *SEOVol*	0.50	1.00									
	(0.00)										
(3) *Investment_TA*	0.39	0.26	1.00								
	(0.00)	(0.00)									
(4) *AfterCarve*	-0.01	0.06	-0.04	1.00							
	(0.02)	(0.00)	(0.00)								
(5) *Size*	-0.17	-0.11	-0.24	0.14	1.00						
	(0.00)	(0.00)	(0.00)	(0.00)							
(6) *FirmAge*	-0.13	-0.15	-0.22	0.05	0.35	1.00					
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)						
(7) *Tangibility*	-0.07	-0.06	-0.18	-0.01	0.17	0.18	1.00				
	(0.00)	(0.00)	(0.00)	(0.08)	(0.00)	(0.00)					
(8) *Profitability*	-0.04	-0.06	0.08	-0.03	0.07	-0.09	0.00	1.00			
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.61)				
(9) *Cash_to_Assets*	0.12	0.05	0.17	-0.02	-0.20	-0.20	-0.29	0.08	1.00		
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)			
(10) *Leverage*	0.00	0.12	-0.16	0.04	0.18	0.05	0.26	-0.11	-0.25	1.00	
	(0.52)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		
(11) *Market_to_Book*	0.19	0.17	0.22	-0.01	-0.13	-0.20	-0.16	-0.03	0.20	-0.01	1.00
	(0.00)	(0.00)	(0.00)	(0.10)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.12)	

Panel C: Descriptive Statistics of the *Ausgliederung*-implemented Firm					
VARIABLES	N	mean	p25	p50	p75
Size	225	5.87	4.66	5.46	7.16
Tangibility	225	29.77	13.76	27.51	41.37
FirmAge	225	3.23	2.89	3.37	3.71
Profitability	225	2.68	0.07	2.87	5.51
Cash_to_Assets	225	6.94	1.12	4.22	9.51
Leverage	225	46.37	32.22	48.24	59.42
Market_to_Book	224	1.38	0.70	1.16	1.76
OCF_TA	225	3.26	-1.01	2.98	7.26
CSFirm	225	0.90	1	1	1
BG	225	0.89	1	1	1
LBG1	225	0.46	0	0	1
LBG2	225	0.26	0	0	1
Layer	201	1.58	1	1	2
VR	203	39.55	30.05	38.72	48.41
CFR	203	29.88	17.77	28.88	40.67
RelSize	225	35.85	5.82	16.70	37.5

[Table 1.3] Correlation between the *Ausgliederung* within five years and the size of seasoned equity offerings

Table 1.3 shows that a Pair implementing Ausgliederung raises more capital through SEOs than other public firms. Panel A uses *SEOVol_TA*, obtained by dividing the amount of capital raised through SEOs by total assets, as a dependent variable. In contrast, Panel B uses *SEOVol*, the log value of capital raised through SEOs, as a dependent variable. The numbers in parentheses are double clustered standard errors by firm and year. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Table 1.1. Data are obtained from the DataGuide.

Panel A: Dependent Variable- *SEOVol_TA*						
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES						
AfterCarve	1.892***	1.276***	1.408***	1.116**	1.171**	1.416***
	(0.369)	(0.343)	(0.329)	(0.484)	(0.501)	(0.307)
Size	-1.850***	-1.458***	-1.258***	-7.869***	-7.313***	-1.200***
	(0.254)	(0.199)	(0.183)	(1.396)	(1.515)	(0.173)
FirmAge	-1.176**	-1.198***	-0.285	0.891	2.740**	-0.253
	(0.437)	(0.404)	(0.234)	(1.702)	(1.294)	(0.235)
Tangibility		-0.036***	-0.016	0.025	0.022	-0.014
		(0.011)	(0.009)	(0.021)	(0.023)	(0.009)
Profitability		-0.289***	-0.328***	-0.079**	-0.157***	-0.328***
		(0.042)	(0.044)	(0.035)	(0.038)	(0.046)
Cash_to_Assets		0.109***	0.052**	0.097**	0.038	0.056**
		(0.033)	(0.024)	(0.043)	(0.028)	(0.022)
Leverage		0.035***	0.015*	0.094***	0.075***	0.014*
		(0.011)	(0.008)	(0.019)	(0.017)	(0.008)
CAPEX_to_PPE			0.004*		0.003	0.003
			(0.002)		(0.002)	(0.002)
Market_to_Book			1.868***		1.781***	1.882***
			(0.248)		(0.319)	(0.244)
Observations	31,206	31,206	29,369	31,130	29,246	28,769
R-squared	0.034	0.047	0.087	0.262	0.234	0.177
Year FE	O	O	O	O	O	X
Industry FE	O	O	O	X	X	X
Firm FE	X	X	X	O	O	X
Industry-Year FE	X	X	X	X	X	O

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Panel B: Dependent Variable - *SEOVol*						
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES						
AfterCarve	0.468***	0.417***	0.431***	0.289***	0.303***	0.439***
	(0.052)	(0.049)	(0.048)	(0.055)	(0.058)	(0.049)
Size	-0.032***	-0.028***	-0.022**	-0.148***	-0.143***	-0.019**
	(0.011)	(0.010)	(0.009)	(0.025)	(0.030)	(0.009)
FirmAge	-0.087***	-0.093***	-0.070***	0.021	0.043	-0.066***
	(0.016)	(0.016)	(0.012)	(0.065)	(0.051)	(0.012)
Tangibility		-0.003***	-0.002***	-0.001*	-0.001	-0.002***
		(0.000)	(0.000)	(0.001)	(0.001)	(0.000)
Profitability		-0.015***	-0.017***	-0.007***	-0.009***	-0.017***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Cash_to_Assets		-0.000	-0.001*	-0.001	-0.002*	-0.001*
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Leverage		0.006***	0.006***	0.009***	0.008***	0.005***
		(0.000)	(0.000)	(0.001)	(0.001)	(0.000)
CAPEX_to_PPE			0.000***		0.000*	0.000**
			(0.000)		(0.000)	(0.000)
Market_to_Book			0.063***		0.056***	0.066***
			(0.008)		(0.009)	(0.007)
Observations	31,206	31,206	29,369	31,130	29,246	28,769
R-squared	0.051	0.095	0.112	0.242	0.261	0.178
Year FE	O	O	O	O	O	X
Industry FE	O	O	O	X	X	X
Firm FE	X	X	X	O	O	X
Industry-Year FE	X	X	X	X	X	O

[Table 1.4] Correlation between the *Ausgliederung* within five years and implementation of SEOs

Table 1.4 examines that a Pair implementing *Ausgliederung* have a higher frequency of SEO than other public firms. *SEO_Dummy*, the dependent variable of Table 4, is a dummy variable with a value of 1 if the firm has conducted an SEO. Equation (1) reports the analysis results using the pooled logit model. Equation (2) uses a panel logit model assuming random effects, while Equation (3) uses a panel logit model considering fixed effects. Equations (4) and (5) use a panel logit model assuming a firm fixed effect, and simultaneously the year fixed effect is also considered. Equations (1)–(3) use the firm-clustered standard error. Equations (4) and (5) calculate coefficients and standard errors using the method proposed by Fernández-Val and Weidner (2016) to solve the incidental parameter problems. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Table 1. Data are obtained from the DataGuide.

Dependent Variable: *SEO_Dummy*					
	(1)	(2)	(3)	(4)	(5)
VARIABLES	Pooled	Random Effects	Fixed Effect	Two-way Fixed Effects	Two-way Fixed Effects
AfterCarve	1.471***	1.451***	1.027***	0.982***	1.023***
	(0.087)	(0.129)	(0.137)	(0.124)	(0.124)
Size	-0.427***	-0.477***	-0.614***	-0.682***	-0.549***
	(0.022)	(0.033)	(0.064)	(0.061)	(0.061)
FirmAge	-0.381***	-0.304***	0.880***	-0.191	-0.626***
	(0.035)	(0.058)	(0.142)	(0.190)	(0.190)
Tangibility	-0.012***	-0.013***	-0.007***	-0.005**	-0.011***
	(0.001)	(0.002)	(0.003)	(0.002)	(0.002)
Profitability	-0.056***	-0.051***	-0.030***	-0.023***	-0.044***
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Cash_to_Assets	-0.009***	-0.009***	-0.008**	-0.008**	-0.005
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Leverage	0.028***	0.032***	0.030***	0.031***	0.030***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
CAPEX_to_PPE	0.001***	0.000***	0.000**	0.000	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Market_to_Book	0.122***	0.151***	0.115***	0.068***	0.053***
	(0.011)	(0.016)	(0.020)	(0.018)	(0.018)
_Cons	0.197	-0.327			
	(0.140)	(0.205)			
Observations	29,371	29,371	15,978	15,978	15,978
Year FE	X	X	X	O	O
Industry FE	X	X	X	X	X
Firm FE	X	X	O	O	O
Bias Correction				Analytical	Jackknife

[Table 1.5] Analysis of the relationship between Pair characteristics and the size of seasoned equity offerings

This table analyzes the effect of certain characteristics on the size of the capital raised by the Pair through stock issuance after Ausgliederung. *Sub_HighP_Ind* equals 1 if a newly-established subsidiary belongs to an industry with top 30% profitability as of the year and 0 otherwise. Similarly, *Sub_LowP_Ind* is 1 only when profitability falls within the bottom 30%. *Sub_HighI_Ind* (*Sub_Low_Ind*) only has a value of 1 when a new subsidiary belongs to an industry with a top (lower) 30% investment relative to total assets. All equations include the control variables used in Table 1.3. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Table 1.1. Data are obtained from the DataGuide.

VARIABLES	(1) SEOVol_TA	(2) SEOVol_TA	(3) SEOVol_TA	(4) SEOVol_TA	(5) SEOVol_TA	(6) SEOVol_TA	(7) SEOVol_TA	(8) SEOVol_TA
Sub_HighP_Ind	-0.855	-0.018	-0.307					
	(0.859)	(0.796)	(0.497)					
Sub_LowP_Ind	2.938***	2.651***	2.519***					
	(0.934)	(0.895)	(0.750)					
Sub_HighI_Ind				3.001**	2.552***			
				(1.072)	(0.748)			
Sub_LowI_Ind				-0.098	-0.587			
				(0.815)	(0.560)			
Parent_HighP						0.504	0.224	0.411
						(1.147)	(1.126)	(0.959)
Parent_LowP						-0.214	-0.226	-0.550
						(0.571)	(0.572)	(0.415)
Observations	1,067	1,066	1,504	1,066	1,504	1,067	1,066	1,504
R-squared	0.100	0.140	0.130	0.142	0.131	0.084	0.130	0.121
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
2-digit Industry FE	No	Yes	Yes	Yes	Yes	No	Yes	Yes

[Table 1. 6] Correlation between *Ausgliederung* within five years and investment size

Table 1.6 examines that a Pair implementing the *Ausgliederung* invests more than other public firms. Table 1.6 uses *Investment_TA*, a variable representing the size of investment relative to total assets, as the dependent variable. All equations in Table 5 consider the year and industry fixed effects. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Table 1. Data are obtained from the DataGuide.

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Dependent Variable: *Investment_TA*				
AfterCarve	1.274**	1.567***	1.120*	0.688	3.284***
	(0.607)	(0.562)	(0.586)	(0.570)	(0.952)
Size	-1.341***	-1.433***	-1.434***	-1.332***	-2.835***
	(0.252)	(0.237)	(0.237)	(0.224)	(0.558)
FirmAge	-1.872***	-1.907***	-1.906***	-1.877***	-4.641***
	(0.266)	(0.277)	(0.276)	(0.256)	(1.337)
OCF_TA		0.058*	0.058*	0.058*	0.213***
		(0.028)	(0.029)	(0.029)	(0.039)
Sales Growth Rate		-0.000	-0.000	-0.000	0.002
		(0.000)	(0.000)	(0.000)	(0.001)
Market_to_Book	2.595***	2.601***	2.599***	2.549***	
	(0.438)	(0.452)	(0.452)	(0.426)	
High_T_Ind			-0.398		
			(0.501)		
High_T_Ind * AfterCarve			1.417*		
			(0.740)		
High_I_Ind				1.787***	
				(0.307)	
High_I_Ind *AfterCarve				1.948*	
				(1.063)	
HighQ					5.719***
					(0.508)
HighQ * AfterCarve					2.510**
					(1.013)
Observations	30,334	29,003	29,003	29,003	29,003
R-squared	0.112	0.113	0.113	0.111	0.141
Year FE	O	O	O	O	O
Industry FE	O	O	O	O	O

[Table 1.7] Matched sample analysis: Correlation between the *Ausgliederung* within five years and the size of seasoned equity offerings and investments

Table 1.7 analyzes the correlation between the *Ausgliederung* within five years and the size of SEOs and investment through a matched sample. Equations (1)–(3) matched one firm with one *Ausgliederung*-implementing firm, and Equations (4)–(6) matched two firms with one *Ausgliederung*-implementing firm. *Treat* is a dummy variable with a value of 1 for the *Ausgliederung*-implementing firm and 0 for the matched firm. *Post5yrs* is a dummy variable with a value of 1 when the period falls within five years after the division, and it applies to both the Pair and the matched firm. In Panel A, the analysis is performed using the amount of capital raised through SEOs to the total asset (*SEOVol_TA*) as a dependent variable. However, the caliper method is used to maintain the difference in propensity scores between the Pair and the matched firm at a certain level (caliper=1%, with replacement). Panel B performed the analysis similarly, using the investment to total assets (*Investment_TA*) as the dependent variable. The numbers in parentheses are double clustered standard errors by firm and year. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Table 1. Data are obtained from the DataGuide.

Panel A: Dependent Variable - *SEOVol_TA*						
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES						
Treat		0.189	0.631		-0.038	0.629
		(0.511)	(0.444)		(0.522)	(0.367)
Post5yrs		-0.469	-0.048		-0.645*	-0.146
		(0.435)	(0.352)		(0.353)	(0.234)
*Treat * Post5yrs*	0.977***	1.260*	1.179**	1.039***	1.539**	1.089**
	(0.266)	(0.665)	(0.566)	(0.307)	(0.598)	(0.474)
Observations	6,485	6,485	5,673	8,988	8,988	7,913
R-squared	0.110	0.110	0.136	0.088	0.088	0.121
Size & FirmAge	Include	Include	Include	Include	Include	Include
Other Control Variables	Exclude	Exclude	Include	Exclude	Exclude	Include
Year FE	O	O	O	O	O	O
Industry FE	O	O	O	O	O	O

Panel B: Dependent Variable- *Investment_TA*

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Treat		0.419	0.499		-0.289	-0.320
		(0.545)	(0.561)		(0.408)	(0.442)
Post5yrs		-0.275	-0.184		-0.570	-0.677
		(0.567)	(0.595)		(0.462)	(0.467)
*Treat * Post5yrs*	1.011*	1.579**	1.326**	1.216*	1.622**	1.795**
	(0.534)	(0.701)	(0.643)	(0.634)	(0.698)	(0.712)
Observations	5,978	5,978	5,673	8,930	8,930	8,488
R-squared	0.129	0.129	0.131	0.132	0.132	0.139
Size & FirmAge	Include	Include	Include	Include	Include	Include
Other Control Variables	Exclude	Exclude	Include	Exclude	Exclude	Include
Year FE	O	O	O	O	O	O
Industry FE	O	O	O	O	O	O

[Table 1.8] Seasoned equity offerings and investment of the *Ausgliederung*-implementing parent firm

     SEOVol_TA_O is the same as *SEOVol_TA* in most firms; however, in the case of the *Ausgliederung*-implemented firm, it is obtained by the parent firm alone, not at the pair level. Similarly, *Investment_TA_O* and *Size_O* of the *Ausgliederung*-implemented firm are obtained using only the parent company. With *SEOVol_TA_O* as a dependent variable, Panel A analyzes the correlation between the amount of capital raised through SEOs relative to the total assets of the divided parent firm and whether the *Ausgliederung* is performed within five years. With *Investment_TA_O* as a dependent variable, Panel B analyzes the correlation between the amount of investment relative to the total assets of the divided parent firm and whether the *Ausgliederung* is performed within five years. The numbers in parentheses are double clustered standard errors by firm and year. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Table 1. Data are obtained from the DataGuide.

Panel A: Dependent Variable - *SEOVol_TA_O*					
	(1)	(2)	(3)	(4)	(5)
VARIABLES					
AfterCarve	0.985*	0.454	0.882*	0.726	0.309
	(0.492)	(0.486)	(0.491)	(0.568)	(0.198)
FirmAge	-1.846***	-5.197***	-1.480***	-4.839***	-0.417***
	(0.246)	(0.775)	(0.280)	(0.750)	(0.072)
Size_O	--2.314***	-7.007***	-2.363***	-7.959***	-0.112
	(0.473)	(1.809)	(0.475)	(1.705)	(0.109)
Observations	31,206	31,206	29,369	29,246	14,707
R-squared	0.061	0.294	0.093	0.306	0.050
Year FE	O	O	O	O	O
Industry FE	O	X	O	X	O

	(1)	(2)	(3)	(4)	(5)
Firm FE	X	O	X	O	X
Other Control Variables	X	X	O	O	O

Panel B: Dependent Variable - *Investment_TA_O*

	(1)	(2)	(3)	(4)	(5)
VARIABLES					
AfterCarve	0.470	-2.463	0.349	-1.934	-2.446*
	(0.919)	(1.547)	(0.688)	(1.327)	(1.230)
HighQ					-1.190
					(1.002)
*HighQ * AfterCarve*					1.826
					(1.526)
Observations	30,334	30,206	29,003	28,872	28,872
R-squared	0.124	0.295	0.128	0.299	0.240
Size & FirmAge	Include	Include	Include	Include	Include
Market_to _Book	Include	Include	Include	Include	Exclude
Year FE	O	O	O	O	O
Industry FE	O	X	O	X	X
Firm FE	X	O	X	O	O
Other Control Variables	X	X	O	O	O

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[Table 1.9] Comparison between the *Ausgliederung*-implementing parent firm and the new wholly-owned subsidiary

Table 1.9 directly compares SEO and investment amount between the *Ausgliederung*-implementing parent firm and the new wholly-owned subsidiary for a certain period after the *Ausgliederung*. The table includes only the parent firm and the new subsidiary, excluding all other firms. *D_NewFirm* is a dummy variable, that is, assigned a value of 1 when a firm is a wholly-owned subsidiary created through the *Ausgliederung* and 0 when it is a parent firm. *Size_separate* is calculated similarly as *Size* but is determined separately for the parent firm and subsidiary. *SEOVol5_separate* represents the accumulated amount of SEOs within five years of the *Ausgliederung* and is calculated for the parent and new firms (KRW in billions), respectively. *SEOVol5_TA_separate* is the value obtained by dividing the cumulative amount of SEOs within five years of the *Ausgliederung* by the total assets at the time of the *Ausgliederung*; it is also defined for both the parent firm and new subsidiary. *SEOVol3_separate* and *SEOVol3_TA_separate* are also determined in the same manner as the previous two variables, except that the reference period is three years. *Inv5_separate* and *Inv3_ separate* represent the cumulative investment amount for five and three years, respectively, after the *Ausgliederung* (KRW in billions). *Inv5_TA_separate* and *Inv3_TA_separate* are the values of the cumulative investment amounts within five and three years of the Ausgliederung, divided by the total assets at the time of division. Panel A shows the difference in the cumulative amount of SEOs between the parent and new firms. In Panel B, the difference in the cumulative amount of SEOs relative to the total assets between the *Ausgliederung*-implementing parent firm and the new subsidiary is analyzed. Panel C shows the difference in investment size between the *Ausgliederung*-implementing parent firm and the newly established subsidiary. The numbers in parentheses are double clustered standard errors by firm and year. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Table 1. Data are obtained from the DataGuide.

Panel A					
	(1)	(2)	(3)	(4)	(5)
VARIABLES	*SEOVOl3_separate*			*SEOVOl5_separate*	
D_NewFirm	20.773	67.585**	72.635**	79.458**	86.669**
	(15.331)	(30.566)	(31.815)	(32.221)	(34.642)
Size_separate		23.223***	25.182***	23.515***	25.281***
		(8.754)	(9.491)	(9.065)	(9.738)
Constant	22.595***	-116.376**	-114.863**	-113.267**	-95.548
	(5.674)	(51.506)	(48.393)	(53.054)	(59.310)
Observations	466	466	466	466	466
R-squared	0.004	0.057	0.063	0.033	0.039
Other Control Variables	Excluded	Excluded	Included	Excluded	Included

Panel B

VARIABLES	(1)	(2)	(3)	(4)
	SEOVOl3_TA_separate		*SEOVOl5_TA_separate*	
D_NewFirm	47.486**	52.411**	110.159*	128.286**
	(20.747)	(25.141)	(66.592)	(63.049)
Observations	466	466	466	466
R-squared	0.010	0.029	0.005	0.015
Other Control Variables	Excluded	Included	Excluded	Included

Panel C

VARIABLES	(1)	(2)
	Inv3_TA_separate	*Inv5_TA_separate*
D_NewFirm	35.53***	70.47**
	(13.26)	(30.48)
Constant	43.41***	69.62**
	(13/16)	(30.15)
Observations	467	467
R-squared	0.087	0.091
Size	Included	Included
Other Control Variables	Included	Included

[Table 1.10] Market reactions to the announcement on the *Ausgliederung* for all cases of the *Ausgliederung*

For all firms that implemented the *Ausgliederung* from 2000 to 2021, the market reactions to the announcement on the *Ausgliederung* are examined. In addition, abnormal returns using the market-adjusted and capital asset pricing models are reported.

Model	AR/CAR	t-value
Market-adjusted Model (1 Day, -1 to 0)	-0.083%	-0.131
Market-adjusted Model (2 Days, -1 to +1)	-0.596%	-1.799*
Market-adjusted Model (3 Days, -1 to +2)	-0.990%	-2.640***
CAPM (1 Day, -1 to 0)	-0.031%	-0.352
CAPM (2 Days, -1 to +1)	-0.545%	-1.952*
CAPM (3 Days, -1 to +2)	-0.928%	-2.791***

[Table 1.11] Differences in the market reactions to the announcement of the *Ausgliederung* according to the purpose of the *Ausgliederung*

Panel A illustrates the classification of the purpose of the *Ausgliederung* into four main types: 1) finance and investment through new subsidiaries, 2) rehabilitation of corporations, 3) establishment of a holding company, and 4) improving efficiency through division. Panel B analyzes the market reaction to the announcement for each purpose of the *Ausgliederung* based on the classification of Panel A. These panels present abnormal returns on the day of announcing the Ausgliederung and cumulative abnormal returns of two-day (-1 to +1) and three-day (-1 to +2). Panel C compares the abnormal returns/cumulative abnormal returns of the *Ausgliederung*-implementing firms that announce the purpose of the division as "Finance and investment through new subsidiaries" with those of other *Ausgliederung*-implementing firms. *Motive_Raising_Capital* is a dummy variable with a value of 1 when the purpose of the *Ausgliederung* is "Finance and investment through new subsidiaries." Focusing on the *Ausgliederung* cases with the *Motive_Raising_Capital* value of 0, Panel D analyzes the correlation between *Cash_to_Assets* of the parent firm and the effect of announcing the *Ausgliederung*. *LowCash* is a variable with a value of 1 when *Cash_to_Assets* of the parent firm belongs to the bottom 30% of all listed firms within the relevant year. The numbers in parentheses are double clustered standard errors by firm and year. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Classification of the *Ausgliederung* according to division purpose in the prospectus

Purpose	Frequency	Relative Frequency (%)	Cumulative Relative Frequency (%)
Finance and investment through new subsidiaries	168	27.45	27.45
Rehabilitation of corporations	23	3.76	31.21
Establishment of a holding company	38	6.21	37.42
Improving efficiency through division	383	62.58	100
Total	612	100	

Panel B: Market reaction to the announcement of the *Ausgliederung* by the purpose of division

AR/CAR	Financing & Investment		Rehabilitation		Holding Company		Improving Efficiency	
	N	mean	N	mean	N	mean	N	mean
AR (Market Adjusted Model, 1 day, %)	168	-1.780***	23	1.668	38	1.984*	380	0.445
AR (CAPM, 1 day, %)	168	-1.903***	23	1.636	38	1.911*	380	0.432
CAR (Market Adjusted Model, 2 days, %)	168	-2.754***	23	1.958	38	1.040	380	0.131
CAR (CAPM, 2 days, %)	168	-2.945***	23	2.122	38	0.954	380	0.142
CAR (Market Adjusted Model, 3 days, %)	168	-3.852***	23	1.720	38	0.252	380	0.086
CAR (CAPM, 3 days, %)	168	-4.020***	23	1.804	38	-0.079	380	0.101

Panel C: Multivariate Analysis - Comparison of market reaction according to the purpose of division

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	AR_1day (CAPM)			CAR_2days (CAPM)		
Motive_Raising_Capital	-2.512***	-2.481***	-2.210***	-3.242***	-3.262***	-2.554***
	(0.490)	(0.489)	(0.709)	(0.632)	(0.631)	(0.924)
Constant	0.609**	1.884	0.375	0.297	1.537	0.382
	(0.283)	(1.582)	(2.411)	(0.365)	(2.029)	(3.190)
Observations	612	612	257	612	612	257
R-squared	0.037	0.040	0.051	0.037	0.038	0.055
Control Variables- Parent Firm	No	Yes	Yes	No	Yes	Yes
Control Variables- Subsidiary	No	No	Yes	No	No	Yes

Panel D: The level of cash holdings of the *Ausgliederung*   parent firm and the market reaction to the announcement of the *Ausgliederung*

VARIABLES	(1) AR_1day (CAPM)	(2) CAR_2day (CAPM)	(3) CAR_3day (CAPM)	(4) AR_1day (CAPM)	(5) CAR_2day (CAPM)
LowCash	1.812***	1.756**	2.137**	2.939***	3.200***
	(0.660)	(0.824)	(1.006)	(0.905)	(1.181)
Constant	0.955	0.859	-1.394	-0.131	-0.091
	(1.821)	(2.343)	(2.827)	(2.719)	(3.423)
Observations	432	432	432	285	285
R-squared	0.025	0.012	0.019	0.047	0.031
Exclude Small Subsidiaries	No	No	No	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes

[Table 2.1] Distribution of SPAC IPOs

Table 2.1 shows the number, proceeds, and status of SPACs listed in KOSDAQ from 2010 to 2021. Panel A reports the status of SPACs as of the end of 2021, and Panel B presents average proceeds, median proceeds, and aggregate gross proceeds of 217 SPAC IPOs on KOSDAQ. All proceeds are expressed in KRW billions. Data sources are Securities Issue Reports submitted to the Financial Supervisory Service.

Panel A: Status of SPACs as of the Year 2021

Completed Mergers	Mergers in progress	Active SPACs	Liquidated SPACs	Total SPACs
110	9	46	52	217

Panel.B. Number and Proceed of SPAC IPOs by Year

		Proceed of SPAC IPOs		
Year	Obs.	Mean	Median	Gross
2010	18	22.18	20.00	399.16
2011	1	20.00	20.00	20.00
2012	0	0.00	0.00	0.00
2013	2	13.00	13.00	26.00
2014	26	11.05	10.00	287.22
2015	45	10.80	10.00	486.04
2016	12	10.86	10.00	130.30
2017	20	7.77	8.00	155.38
2018	20	7.76	7.75	155.20
2019	30	8.88	8.00	266.35
2020	19	8.63	8.40	164.00
2021	24	9.95	8.00	238.69
Total	217	10.73	9.00	2328.35

[Table 2.2] SPAC mergers and Traditional IPOs

Table 2.2 reports the number, average proceeds, and gross proceeds of SPAC mergers and traditional IPOs by year. Data sources are Securities Issue Reports submitted to the Financial Supervisory Service. All proceeds are expressed in KRW billions.

	SPAC Mergers			Traditional IPOs		
Year	Obs.	Average Proceeds (KRW in billions)	Gross Proceeds (KRW in billions)	Obs.	Average Proceeds (KRW in billions)	Gross Proceeds (KRW in billions)
2010	0	0.00	0.00	51	14.8	754.86
2011	2	21.63	43.26	55	23.00	1264.93
2012	4	25.38	101.50	20	13.58	271.69
2013	3	22.33	67.00	35	17.78	622.23
2014	2	17.40	34.80	40	24.49	832.78
2015	13	11.80	153.34	57	31.39	1538.29
2016	12	9.70	116.38	47	40.49	1578.92
2017	20	11.07	221.50	53	66.66	3266.31
2018	11	9.38	103.19	65	29.06	1685.38
2019	11	8.86	97.50	63	36.03	2089.64
2020	17	8.39	142.58	65	39.11	2189.97
2021	15	8.92	133.85	72	45.61	2827.96
Total	110	11.04	1214.91	623	33.43	18922.95

[Table 2.3] Industry distribution of firms became public between 2010-2021

Panel A of Table 2.3 displays the distribution of 2-digit industry classification for SPAC targets and traditional IPOs. Considering the high proportion of firms belonging to the manufacturing and information/communication industries, Panel B and C show the 3-digit industry code distribution of firms belonging to these industries, respectively. For each panel, chi-squared test statistics to test whether a difference in the industry distribution between the two groups is presented together.

Panel A. 2- digit industry classification for SPAC targets and traditional IPOs.

Industry	SPAC Mergers		Traditional IPOs	
	Freq	Pct.	Freq	Pct.
Accommodation and Food Service Activities	1	0.91%	0	0.00%
Agriculture, Forestry and Fishing	0	0.00%	1	0.16%
Arts, Sports and Recreation related Services	1	0.91%	2	0.32%
Business Facilities Management and Business Support Services; Rental and Leasing Activities	1	0.91%	2	0.32%
Construction	1	0.91%	3	0.48%
Education	1	0.91%	2	0.32%
Information and Communication	24	21.82%	111	17.82%
Manufacturing	69	62.73%	425	68.22%
Professional, Scientific, and Technical Activities	7	6.36%	52	8.35%
Transportation and Storage	0	0.00%	1	0.16%
Water Supply; Sewage, Waste Management, Materials Recovery	0	0.00%	1	0.16%
Wholesale and Retail trade	5	4.55%	23	3.69%
Total	110	100.00%	623	100.00%

Pearson $\chi 2(11)$= 10.743   Pr=0.465

Panel B. 3-Digit industry classification for manufacturing SPAC targets and traditional IPOs.

Manufacturing Industry	SPAC Mergers		Traditional IPOs	
	Freq.	Pct.	Freq.	Pct.
Chemicals	7	10.1%	42	9.88%
Computers	9	13.0%	97	22.82%
Equipment	16	23.2%	102	24.00%
Food and Beverages	4	5.8%	21	4.94%
Metal Products	4	5.8%	17	4.00%
Pharmaceuticals	2	2.9%	58	13.65%
Precision and Optical Instruments	8	11.6%	45	10.59%
Rubber and Plastic Products	8	11.6%	9	2.12%
Textiles, Apparel, and Leather	2	2.9%	7	1.65%
Transport	2	2.9%	22	5.18%
Others	7	10.1%	5	1.18%
Total	69	100%	425	100%

Pearson $\chi^2(17) = 13.932$, Pr=0.672

Information and Communication	SPAC Mergers		Traditional IPOs	
	Freq	Pct.	Freq	Pct.
Broadcasting	0	0.00%	3	2.70%
Information service	2	8.33%	17	15.32%
Music and Video	3	12.50%	11	9.91%
Publishing	17	70.83%	72	64.86%

Software	2	8.33%	7	6.31%
Telecommunications	0	0.00%	1	0.90%
Total	24	100.00%	111	100.00%

Pearson $\chi2(5)$ = 1.904, Pr=0.862

[Table 2.4] Pre-listing firm characteristics

Panel A of Table 2.4 presents mean and median pre-listing firm characteristics for SPAC targets and traditional IPO firms and the results of mean and median difference tests. Pre-listing firm characteristics are measured in previous years of going public. Columns 1, 2, and 3 include all SPAC targets, SPAC targets with technology listings, and SPAC targets excluding technology listings, respectively. Similarly, column 4, 5, and 6 contains all traditional firms, traditional IPO firms with technology listings, and traditional IPO firms excluding technology listings. Column 7 presents the difference between SPAC and traditional IPO firms through mean and median values for each characteristic. Column 9 is identical to Column 7, except technology listings are excluded. Column 8 shows the p-value for the statistical significance of the difference between the mean and median between the two groups presented in column 7.   Similar to Column 8, Column 10 displays the p-value for the statistical significance of the values presented in Column 9. Panel B shows a pairwise correlation matrix of the variables we use to analyze the SPAC acquisitions and IPOs executed from 2010 to 2021. All variables are defined in Appendix B. Data are obtained from the DataGuide.

Panel A. Comparison of pre-listing firm characteristics between SPAC target firms and traditional IPO firms

	SPAC firms			IPO firms			Diff(A-D)		Diff(C-F)	
	Total (A)	Tech_List (B)	Non-Tech_List (C)	Total (D)	Tech_List (E)	Non-Tech_List (F)	Mean	P-value	Mean	P-value
	(N=110)	(N=6)	(N=104)	(N=623)	(N=134)	(N=489)	Median	P-value	Median	P-value
Total_Assets	37.169	12.798	38.575	58.778	22.956	68.716	-21.609	0.066	-30.141	0.026

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	[27.109]	[12.46]	[28.292]	[35.753]	[18.119]	[41.265]	[-8.644]	[.002]	[-12.973]	[0.000]
lnTA	1.048	0.142	1.101	1.305	0.594	1.502	-0.256	0.003	-0.401	0.000
	[.997]	[.176]	[1.04]	[1.274]	[.594]	[1.417]	[-.277]	[0.002]	[-.377]	[0.000]
EBIT	4.72	-0.884	5.043	6.645	-1.928	8.994	-1.925	0.099	-3.951	0.001
	[3.901]	[0.324]	[4.067]	[4.926]	[-2.223]	[6.072]	[-1.025]	[0.055]	[-2.005]	[0.000]
Gross Sales	39.395	12.32	40.957	54.985	12.378	66.661	-15.59	0.041	-25.704	0.002
	[28.929]	[7.705]	[29.287]	[35.406]	[5.076]	[44.386]	[-6.477]	[0.155]	[-15.099]	[0.000]
Sales Growth	42.677	-3.128	45.014	55.684	82.554	48.703	-13.007	0.234	-3.689	0.700
	[18.809]	[-11.406]	[18.887]	[22.85]	[26.014]	[22.797]	[-4.041]	[0.077]	[-3.91]	[0.169]
Cash_TA	16.786	22.435	16.46	16.497	22.366	14.889	0.289	0.849	1.571	0.276
	[11.549]	[9.46]	[11.717]	[12.951]	[15.938]	[11.695]	[-1.402]	[0.597]	[0.022]	[0.756]
Leverage	46.172	49.846	45.96	48.333	64.274	43.965	-2.161	0.435	1.995	0.352
	[45.709]	[51.246]	[45.709]	[44.898]	[56.125]	[44.001]	[0.811]	[0.956]	[1.708]	[0.409]
OCF_TA	13.911	-1.616	14.852	12.443	-14.012	19.752	1.469	0.589	-4.899	0.032
	[10.41]	[2.667]	[11.124]	[12.198]	[-10.367]	[16.314]	[-1.788]	[0.558]	[-5.19]	[0.003]
Intan_TA	3.95	8.215	3.691	4.763	6.251	4.346	-0.813	0.298	-0.655	0.383

	[1.285]	[2.318]	[1.172]	[1.706]	[2.074]	[1.588]	[-.421]	[0.112]	[-.416]	[0.150]
Tech_Firm	0.118	0.167	0.115	0.209	0.112	0.235	-0.09	0.027	-0.120	0.007
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.027]	[0.000]	[0.007]
Firm_Age	14.518	15.833	14.442	13.865	11.978	14.382	0.653	0.422	0.060	0.946
	[15]	[17]	[15]	[13]	[11]	[13]	[2]	[0.020]	[2]	[0.126]
VC_Ownership_tot	7.949	5.543	8.088	7.259	10.664	6.325	0.69	0.539	1.762	0.133
	[0.000]	[0.000]	[0.000]	[0.000]	[8.695]	[0.000]	[0.000]	[0.864]	[0.000]	[0.168]
VC_Dummy	0.455	0.333	0.462	0.467	0.701	0.403	-0.013	0.808	0.059	0.271
	[0]	[0]	[0]	[0]	[1]	[0]	[0]	[0.808]	[0]	[0.270]
mean_KOSDAQ_252	0.043	-0.01	0.046	0.03	0.047	0.026	0.013	0.210	0.020	0.045
	[0.026]	[-.016]	[0.029]	[0.017]	[0.046]	[0.012]	[0.009]	[0.295]	[0.017]	[0.102]
sd_KOSDAQ_252	1.298	1.31	1.297	1.303	1.44	1.266	-0.005	0.898	0.031	0.471
	[1.232]	[1.189]	[1.232]	[1.215]	[1.423]	[1.148]	[0.017]	[0.956]	[0.084]	[0.264]

Panel B. Correlation between Pre-listing firm characteristics

	Total_Assets	lnTA	EBIT	Gross Sales	Sales Growth	Cash_TA	Leverage	OCF_TA	Intan_TA	Tech_Firm	Firm_Age	VC_Ownership	VC_Dummy
Total_Assets	1.000												
lnTA	0.621	1.000											
EBIT	0.715	0.582	1.000										
Gross Sales	0.667	0.672	0.724	1.000									
Sales Growth	0.025	-0.081	0.065	-0.019	1.000								
Cash_TA	-0.149	-0.347	-0.083	-0.192	0.124	1.000							
Leverage	0.042	0.015	-0.141	0.065	0.092	-0.088	1.000						
OCF_TA	0.012	0.169	0.372	0.113	0.043	0.085	-0.319	1.000					
Intan_TA	0.030	-0.088	-0.005	-0.050	0.107	-0.028	0.079	-0.010	1.000				
Tech_Firm	-0.012	0.051	0.031	0.049	-0.034	0.046	-0.040	0.113	-0.053	1.000			
Firm_Age	0.145	0.249	0.007	0.089	-0.239	-0.181	-0.058	-0.022	-0.128	-0.072	1.000		
VC_Ownership	-0.098	-0.146	-0.113	-0.151	0.113	0.014	0.113	-0.060	-0.023	0.102	-0.132	1.000	
VC_Dummy	-0.132	-0.214	-0.157	-0.192	0.107	0.025	0.082	-0.141	-0.008	0.100	-0.127	0.728	1.000

[Table 2.5] Determinants of SPAC mergers and traditional IPOs

The table reports the results of logit regressions. The dependent variable is 1 for SPAC merger firms and 0 for traditional IPO firms. Columns (1)-(3) include all companies that became public between 2010 and 2021. Technology listings are excluded in Columns (4)-(6). The numbers in parentheses are firm-clustered standard errors. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Table 2.A1. Data are obtained from the DataGuide.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Including Tech Listings			Excluding Tech Listings		
lnTA	-0.027***			-0.034***		
	(0.006)			(0.005)		
Sales		-0.003***			-0.004***	
		(0.001)			(0.001)	
EBIT			-0.002**			-0.003***
			(0.001)			(0.001)
Sales Growth	-0.000	-0.000	-0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash_TA	-0.001*	-0.000	-0.000	-0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.000	-0.000	-0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
OCF_TA	0.000	0.000	0.001	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Intan_TA	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
Tech_Ind	-0.063***	-0.064***	-0.064***	-0.053***	-0.059***	-0.058***
	(0.011)	(0.010)	(0.013)	(0.006)	(0.007)	(0.007)

Firm_Age	0.001	0.000	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
VC_Ownership	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
mean_KOSDAQ_252	-0.012	-0.012	-0.008	0.008	0.006	0.020
	(0.064)	(0.063)	(0.058)	(0.056)	(0.059)	(0.057)
sd_KOSDAQ_252	-0.021	-0.017	-0.015	-0.012	-0.011	-0.007
	(0.022)	(0.021)	(0.021)	(0.019)	(0.020)	(0.021)
Constant	-1.254***	-1.286***	-1.308***	-0.555***	-0.574***	-0.595***
	(0.197)	(0.159)	(0.189)	(0.078)	(0.000)	(0.075)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	692	692	692	563	563	563
Pseudo R-squared	0.153	0.141	0.139	0.209	0.186	0.186

[Table 2.6] Univariate analysis of investment and financing around going public.

Table 2.6 presents the mean and median change in financing (*FinCF_TA, FinIn_TA, Equity Issue_TA, ln(Equity Issue), Debt Issue_TA, ln(Debt Issue)*) and investment activities (*InvCF_TA, InvOut_TA, InvIn_TA)* from T-1 year (or, T-2 year) to T+1 year(or, T+2 year) given T year is a listing year. ΔX in [-1, +1] is computed as $X_{+1} - X_{-1}$. This table presents the changes in financing and investment patterns before and after going public for SPAC merger firms and traditional IPO firms. Differences in the investment and financing changes between the two groups are also presented. See Table 2.A1 for variable definitions. Data are obtained from the DataGuide.

	Window	SPAC Mergers (A)			Traditional IPOs (B)			Difference (A-B)			
	(T=listing Year)	N	Mean	Median	N	Mean	Median	Mean	P-value	Median	P-value
ΔFinCF_TA	[T-1, T+1]	68	3.15	-0.04	412	0.62	0.71	2.52	0.55	-0.75	0.96
	[T-1, T+2]	59	16.01	1.59	372	3.16	0.70	12.85	0.02	0.89	0.31
	[T-2, T+2]	45	11.17	2.16	329	-2.07	-0.10	13.25	0.03	2.26	0.07
ΔFinIn_TA	[T-1, T+1]	68	-3.28	-0.35	412	-9.00	-1.39	5.72	0.34	1.04	0.39
	[T-1, T+2]	59	14.08	1.79	372	-5.24	0.00	19.32	0.01	1.79	0.05
	[T-2, T+2]	45	1.33	0.00	329	-12.65	-4.33	13.98	0.09	4.33	0.14
ΔEquity Issue_TA	[T-1, T+1]	68	-5.40	0.00	397	-1.74	0.00	-3.66	0.23	0.00	0.00
	[T-1, T+2]	59	3.95	0.00	357	0.16	0.00	3.79	0.47	0.00	0.00
	[T-2, T+2]	43	-23.67	0.00	312	-0.20	0.00	-23.47	0.02	0.00	0.07
Δln(Equity Issue)	[T-1, T+1]	73	-0.36	0.00	400	-3.79	0.00	3.43	0.00	0.00	0.00
	[T-1, T+2]	63	2.17	0.00	360	-2.99	0.00	5.16	0.00	0.00	0.00

	[T-2, T+2]	57	1.01	0.00	354	-1.59	0.00	2.61	0.02	0.00	0.01
ΔDebt Issue_TA	[T-1, T+1]	68	-2.23	0.00	412	-6.86	0.00	4.63	0.36	0.00	0.29
	[T-1, T+2]	59	6.16	0.02	372	-5.18	0.00	11.34	0.05	0.02	0.09
	[T-2, T+2]	45	-4.52	0.00	329	-11.89	-2.37	7.37	0.30	2.37	0.15
Δln(Debt Issue)	[T-1, T+1]	73	0.41	0.06	415	0.28	0.00	0.14	0.90	0.06	0.72
	[T-1, T+2]	63	1.99	0.45	375	0.74	0.18	1.24	0.28	0.27	0.31
	[T-2, T+2]	59	-0.07	0.01	372	-0.54	0.00	0.47	0.65	0.01	0.82
ΔInvCF_TA	[T-1, T+1]	68	4.21	3.64	412	-5.19	-1.93	9.40	0.03	5.56	0.07
	[T-1, T+2]	59	3.97	-1.24	372	-7.33	-3.86	11.31	0.02	2.62	0.39
	[T-2, T+2]	45	8.53	1.13	329	-8.54	-5.55	17.06	0.00	6.68	0.01
ΔInvOut_TA	[T-1, T+1]	68	20.12	13.74	412	6.64	6.06	13.49	0.05	7.68	0.06
	[T-1, T+2]	59	28.50	7.89	372	1.56	1.07	26.95	0.00	6.83	0.02
	[T-2, T+2]	45	35.49	14.98	329	-0.49	0.10	35.98	0.00	14.87	0.00
ΔInvIn_TA	[T-1, T+1]	68	15.86	4.60	412	12.32	3.55	3.54	0.46	1.05	0.42
	[T-1, T+2]	59	24.84	13.28	372	8.89	2.64	15.95	0.00	10.64	0.02
	[T-2, T+2]	45	24.79	14.01	329	8.46	2.37	16.33	0.02	11.64	0.05

[Table 2.7] Comparison of financing activities between SPAC targets and traditional IPO firms around going public

This table compares the financing activities of SPAC firms and traditional IPO firms before and after going public. The table presents results from a panel regression of the form:

$$Y_{i,t} = \mu + \nu_i + \tau_i + \beta_1 SPAC_i + \beta_2 SPAC_i \times After_{i,t} + \boldsymbol{\beta_3 X_{i,t-1}} + \varepsilon_{i,t}$$

where $Y_{i,t}$ is financing activities at the end of year t, ν_i is the unobservable industry effect, τ_i is the fixed year effect, $SPAC_i$ is an indicator variable for whether firm i is a SPAC firm, $After_{i,t}$ is an indicator variable for whether year t is going public. $\boldsymbol{X_{i,t-1}}$ is a set of control variables for firm i measured at the end of year t-1 (*lnTA, Firm_Age, Sales Growth, and Cash_TA*). The sample consists of SPAC target and traditional IPO firms and includes five-year observations from T-2 to T+2 for each firm. Panel A reports the regression analysis results using *FinCF_TA* and *FinIn_TA* as dependent variables related to the entire financing activities. Panel B presents the regression results performed by separating financing using equity and financing using debt. The numbers in parentheses are firm-clustered standard errors. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Appendix A1. Data are obtained from the DataGuide.

Panel A. Multivariate analysis: Entire financing activities of SPAC targets and traditional IPO firms around going public

	(1)	(2)	(3)	(4)
VARIABLES	*FinCF_TA*	*FinCF_TA*	*FinIn_TA*	*FinIn_TA*
SPAC	-21.070***	-27.659***	-18.668***	-24.360***
	(2.435)	(2.642)	(3.517)	(3.792)
*SPAC*After*	17.946***	23.254***	10.748**	16.626***
	(3.676)	(3.981)	(4.163)	(4.489)
lnTA	-0.300***	-0.145*	-0.366**	-0.215
	(0.109)	(0.084)	(0.183)	(0.164)
Firm_Age	-10.177***	-11.641***	-8.677***	-9.777***
	(1.367)	(1.385)	(1.932)	(2.238)
Sales Growth		0.097***		0.132***
		(0.023)		(0.026)
Cash_TA		0.130		-0.230**
		(0.091)		(0.110)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	2568	1970	2568	1970
Adj R-squared	0.097	0.148	0.047	0.085

Panel B. Multivariate analysis: Equity/debt financing of SPAC targets and traditional IPO firms around going public

VARIABLES	(1) Equity Issue/TA	(2) ln(Equity Issue)	(3) Debt Issue/TA	(4) ln(Debt Issue)
SPAC	-30.083***	-6.468***	0.348	0.593
	(3.804)	(0.398)	(2.935)	(0.633)
SPAC*After	15.614***	2.879***	4.644	0.160
	(2.935)	(0.637)	(3.294)	(0.793)
lnTA	-11.801***	-1.701***	0.645	1.168***
	(2.394)	(0.220)	(1.717)	(0.330)
Firm_Age	0.119***	0.015***	0.036***	0.002
	(0.045)	(0.003)	(0.013)	(0.002)
Sales Growth	0.378**	-0.040***	-0.429***	-0.131***
	(0.175)	(0.012)	(0.063)	(0.016)
Cash_TA	-0.033	-0.004	-0.139	0.027
	(0.108)	(0.016)	(0.129)	(0.029)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	1,957	1,957	1,970	1,970
Adj R-squared	0.126	0.111	0.073	0.181

[Table 2.8]　Equity issuance following going public

This table presents details about seasoned equity offerings conducted by SPAC merger firms and traditional IPO firms in the three years after becoming a public firm. The year each firm listed is defined as Year T. Panel A shows the number of firms that have made that type of seasoned equity offering for each year. Considering the high proportion of the private placement, Panel B presents which kind of investor participated in the private placement. The types of investors were classified as follows: *Largest Shareholders* mean the company's largest shareholder and its family. *Insiders* are firms within the same business group or non-family executives. External companies that disclose that they have participated in the private placement for strategic purposes such as technology alliances are classified as *Alliance* and external companies that do not are classified as *Outside companies*. Individual investors outside the company are classified as *Independent investors*, and external investment institutions such as mutual funds are classified as *Investment Institutions*. When multiple investors participate in a single private placement, the type is classified based on the subject assigned the most shares. Some firms have made private placements several times a year, so the total number of private placements in Panel B is larger than that of Panel A. All data were manually collected from the securities issuance report submitted to the Financial Supervisory Service.

Panel A. Types of Equity Issuance

	SPAC mergers			Traditional IPOs			
Issuance Type	T+1	T+2	T+3	T+1	T+2	T+3	Total
Public Offerings	0	0	0	3	2	1	6
Rights Offerings	0	6	3	6	8	12	35
Private Placements	8	8	10	23	40	40	129
Total	8	14	13	32	50	53	170

Panel B. Investor Types for Private Placements

Issuance Type	SPAC mergers	Traditional IPOs	Total
Individual investors	1	14	15
Insiders	3	11	14
Unknown	0	1	1
Outside companies	5	20	25
Largest shareholders	6	10	16
Investment Institutions	5	40	45
Alliance	7	12	19
Total	27	108	135

[Table 2.9] Comparison of investing activities between SPAC targets and traditional IPO firms around going public

This table compares the investing activities of SPAC firms and traditional IPO firms before and after going public. The table presents results from a panel regression of the form:

$$Y_{i,t} = \mu + \nu_i + \tau_i + \beta_1 SPAC_i + \beta_2 SPAC_i \times After_{i,t} + \beta_3 X_{i,t-1} + \varepsilon_{i,t}$$

where $Y_{i,t}$ is investing activities at the end of year t, ν_i is the unobservable industry effect, τ_i is the fixed year effect, $SPAC_i$ is an indicator variable for whether firm i is a SPAC firm, $After_{i,t}$ is an indicator variable for whether year t is going public. $X_{i,t-1}$ is a set of control variables for firm i measured at the end of year t-1 (*lnTA, Firm_Age, Sales Growth,* and *Cash_TA*). The sample consists of SPAC target and traditional IPO firms and includes five-year observations from T-2 to T+2 for each firm. The numbers in parentheses are firm-clustered standard errors. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Appendix A1. Data are obtained from the DataGuide

VARIABLES	(1) InvCF_TA	(2) InvCF_TA	(3) InvOut_TA	(4) InvOut_TA	(5) InvIn_TA	(6) InvIn_TA
SPAC	-19.271***	-22.690***	-19.434***	-16.266***	5.418*	8.102**
	(1.861)	(2.211)	(6.083)	(5.372)	(2.814)	(3.599)
SPAC*After	17.763***	21.946***	33.080***	29.579***	8.772**	2.969
	(3.230)	(3.556)	(7.205)	(6.593)	(4.334)	(4.428)
lnTA	-7.704***	-7.216***	-13.386***	-10.674***	-0.507	-2.585*
	(0.974)	(0.975)	(4.524)	(2.284)	(1.143)	(1.467)
Firm_Age	-0.305***	-0.160**	-0.584***	-0.520**	-0.175	-0.277**
	(0.093)	(0.077)	(0.195)	(0.207)	(0.111)	(0.127)
Sales Growth		0.077***		0.097**		-0.021*
		(0.014)		(0.038)		(0.013)
Cash_TA		0.394***		0.387**		-0.095
		(0.067)		(0.159)		(0.085)

Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	2,568	1,970	2,568	1,970	2,568	1,970
Adj R-squared	0.099	0.159	0.067	0.109	0.056	0.065

[Table 2.10] The effect of sales growth on the relation between the SPAC merger and investment

This table presents the effect of sales growth on the relation between the SPAC merger and investment using triple difference estimation.   As in Tables 2.7 and 2.9, the sample consists of SPAC firms and traditional IPO firms. The sample includes five-year observations from T-2 to T+2 for each firm.   *SPAC* is an indicator variable for whether a firm is a SPAC firm, *After* is an indicator variable with a value of 1 after going public and 0 otherwise. *High Sales Growth* is an indicator variable with a value of 1 if the average sales growth rate for the two years before the listing is greater than the median value in the sample and 0 otherwise. The numbers in parentheses are firm-clustered standard errors. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Appendix A1. Data are obtained from the DataGuide

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	InvCF_TA	InvCF_TA	InvOut_TA	InvOut_TA	InvIn_TA	InvIn_TA
SPAC	-12.335***	-13.573***	-7.754	-2.371	5.799	9.073
	(2.130)	(2.609)	(6.767)	(8.404)	(4.262)	(5.604)
High Sales Growth	14.235***	14.316***	14.465***	9.987**	-4.337*	-5.371*
	(1.779)	(2.219)	(4.726)	(4.599)	(2.530)	(2.976)
SPAC*After	13.671***	15.381***	41.453***	34.913***	15.971**	9.719
	(4.556)	(4.869)	(13.375)	(11.988)	(6.358)	(6.429)
After* High Sales Growth	-12.894***	-14.921***	-0.648	-1.310	14.514***	14.060***
	(2.034)	(2.304)	(4.021)	(4.158)	(2.411)	(2.616)
SPAC* High Sales Growth	-16.205***	-22.725***	-22.164**	-27.580***	2.817	2.682
	(3.437)	(4.098)	(9.884)	(10.205)	(5.512)	(6.882)
SPAC*After*High Sales Growth	17.048***	23.867***	-13.093	-5.072	-23.767***	-22.036**
	(6.554)	(7.182)	(16.442)	(14.981)	(9.078)	(9.072)
lnTA	-5.885***	-5.532***	-12.868***	-10.442***	-2.230*	-4.188***
	(0.927)	(0.985)	(4.369)	(2.439)	(1.225)	(1.562)
Firm_Age	-0.172*	-0.096	-0.403*	-0.435**	-0.163	-0.246*
	(0.089)	(0.079)	(0.211)	(0.221)	(0.117)	(0.134)
Sales Growth		0.051***		0.088**		-0.004

		(0.015)		(0.042)		(0.014)
Cash_TA		0.418***		0.388**		-0.124
		(0.067)		(0.158)		(0.084)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	2,568	1,970	2,568	1,970	2,568	1,970
Adj R-squared	0.129	0.187	0.075	0.116	0.071	0.078

[Table 2.11] Placebo test using matched private firms

This table reports the results of a placebo test using matched unlisted firms with similar characteristics to SPAC merger firms.   Panel A reports the pre-listing firm characteristics for SPAC and matched unlisted firms and the difference in mean and median between the two groups. In Panel A, all firm characteristics are measured as of the fiscal year immediately before public listing. To construct panel A, each SPAC firm is matched with the nearest unlisted firm by *lnTA*. *lnSales*, *Firm_Age*, *Cash_TA*, *Sales Growth*, and 3-digit industry code among firms with the same year and 1-digit industry code. Using matched private firms identified in Panel A instead of SPAC target firms, Panels B and C conduct similar analyses as in Tables 2.7 and 2.9. The sample consists of matched private and traditional IPO firms and includes five-year observations from T-2 to T+2 for each firm.   Panels B and C examine the differences in financing and investment activities between the matched unlisted firms and traditional IPO firms around going public, respectively. Variables related to financing are used as dependent variables in Panel B, and variables related to investment are used as dependent variables in Panel C.   *SPAC_Matched* is an indicator variable for whether a firm is a matched unlisted firm. *After* is an indicator variable equals one after the SPAC targets' going public and 0 otherwise. The numbers in parentheses are firm-clustered standard errors. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Appendix A1. Data are obtained from the DataGuide

Panel A. Comparison of characteristics between SPAC merger firms and matched private firms

Matching Criteria: *lnTA, lnSales, Firm_Age, Cash_TA*, 3-digit Industry Code

	SPAC Firms		Matched Unlisted Firms		Difference (SPAC-Matched)			
	Mean	Median	Mean	Median	Mean	p-value	Median	p-value
lnTA	1.063	1.008	1.178	0.949	-0.115	0.300	0.059	0.756
lnSales	1.182	1.092	1.247	1.072	-0.065	0.554	0.020	0.875
Firm_Age	14.532	15.000	14.898	15.000	-0.366	0.668	0.000	0.995
Cash_TA	16.954	11.170	15.799	9.815	1.155	0.588	1.355	0.413

Panel B. Placebo tests: Financing activities of matched private firms and traditional IPO firms around going public

	(1)	(2)	(3)	(4)
VARIABLES	*FinCF_TA*	*FinCF_TA*	*FinIn_TA*	*FinIn_TA*
SPAC_Matched	-10.769***	-8.151***	-8.813**	-6.037
	(2.074)	(2.802)	(3.556)	(4.223)
*SPAC_Matched *After*	-0.261	-3.253	-0.788	-3.747
	(2.324)	(3.263)	(3.343)	(3.819)
lnTA	3.909***	3.248***	6.423***	6.273***
	(1.093)	(1.048)	(1.668)	(1.884)
Firm_Age	-0.527***	-0.321***	-0.654***	-0.485***
	(0.093)	(0.078)	(0.157)	(0.143)
Sales Growth		0.107***		0.153***
		(0.023)		(0.026)
Cash_TA		0.055		-0.145**
		(0.046)		(0.057)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	2,589	1,994	2,589	1,994
Adj R-squared	0.077	0.119	0.062	0.098

Panel C. Placebo tests: Investing activities of matched private firms and traditional IPO firms around going public

VARIABLES	(1) InvCF_TA	(2) InvCF_TA	(3) InvOut_TA	(4) InvOut_TA	(5) InvIn_TA	(6) InvIn_TA
SPAC_Matched	-9.340***	-5.468*	-14.219***	-10.585**	-4.608*	-5.768*
	(1.855)	(2.807)	(3.439)	(4.903)	(2.606)	(3.476)
SPAC_Matched*After	0.590	-2.295	-1.232	-5.733	-1.872	-3.063
	(2.138)	(3.152)	(3.726)	(4.982)	(2.603)	(3.190)
lnTA	2.042**	2.033**	2.937*	2.564	0.205	-0.287
	(0.877)	(0.871)	(1.680)	(1.800)	(1.098)	(1.277)
Firm_Age	-0.465***	-0.247***	-0.669***	-0.501***	-0.133	-0.221**
	(0.076)	(0.060)	(0.140)	(0.143)	(0.098)	(0.111)
Sales Growth		0.070***		0.050**		-0.029***
		(0.015)		(0.024)		(0.011)
Cash_TA		0.211***		0.232***		-0.010
		(0.037)		(0.065)		(0.041)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	2589	1994	2589	1994	2589	1994
Adj R-squared	0.074	0.137	0.088	0.112	0.050	0.057

[Table 2.12] Comparison of the effects of listing on financing and investment between SPAC firms and traditional IPOs using a matching-based approach

This table tests whether there is a difference in the effects of listing on financing and investment between SPAC firms and traditional IPO firms. Like Table 11, Panel A identifies the nearest private matching firm of the traditional IPO firm and reports the results. Matching is processed based on the following characteristics among firm-year observations with the same year and 1-digit industry code: *lnTA. lnSales, Firm_Age, Cash_TA, Sales Growth,* and 3-digit industry code. *d_FinCF_TA* is the difference in *FinCF_TA* between a SPAC firm (or a transactional IPO firm) and its matched firm. Similarly, *d_FinIn_TA, d_InvCF_TA, d_InvOut_TA*, and *d_InvIn_TA* refer to differences in *FinIn_TA, InvCF_TA, InvOut_TA,* and *InvIn_TA* between two firms constituting a pair. *SPAC* is an indicator variable for whether a firm is a SPAC firm, *After* is an indicator variable with a value of 1 after going public and 0 otherwise. Panel B reports the regression analysis results in which *d_FinCF_TA* and *d_FinIn_TA* are used as dependent variables. *SPAC*, *After*, the interaction term of *SPAC* and *After*, and characteristics of SPAC firm (or traditional IPO firm) are used as independent variables in Panel B. Using investment-related *d_InvCF_TA, d_InvOut_TA*, and *d_InvIn_TA* as dependent variables, Panel C compares the effects of listing on investment between SPAC firms and traditional IPOs. The numbers in parentheses are firm-clustered standard errors. All continuous variables are winsorized at the 1st and 99th percentile. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Other variables are defined in Appendix A1. Data are obtained from the DataGuide

Panel A. Comparison of pre-listing firm characteristics between traditional IPO firms and their matched Firms

Matching Criteria: *lnTA, lnSales, Firm_Age, Cash_TA*, 3-digit Industry Code

	Traditional IPO Firms		Matched Unlisted Firms		Difference (IPO-Matched)			
	Mean	Median	Mean	Median	Mean	p-value	Median	p-value
LnTA	1.353	1.307	1.345	1.308	0.008	0.882	-0.001	0.840
LnSales	1.114	1.347	1.150	1.335	-0.036	0.663	0.012	0.963
FirmAge	13.881	13.000	13.964	13.000	-0.083	0.854	0.000	0.608
Cash_TA	17.743	13.540	17.450	13.210	0.293	0.749	0.330	0.508

Panel B. Comparison of the effects of listing on financing between SPAC firms and traditional IPOs

VARIABLES	(1) d_FinCF_TA	(2) d_FinCF_TA	(3) d_FinIn_TA	(4) d_FinIn_TA
SPAC	-19.132***	-22.547***	-18.566***	-20.527***
	(2.622)	(2.857)	(4.415)	(4.744)
SPAC*After	17.470***	19.545***	11.534**	13.078***
	(3.971)	(4.241)	(4.762)	(4.849)
lnTA	-10.224***	-11.361***	-9.472***	-9.983***
	(1.279)	(1.566)	(2.004)	(2.405)
Firm_Age	-0.065	0.032	-0.196	-0.107
	(0.099)	(0.093)	(0.188)	(0.195)
Sales Growth		0.081***		0.113***
		(0.025)		(0.028)
Cash_TA		0.064		-0.089
		(0.087)		(0.117)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	2,771	2,235	2,771	2,235
Adj R-squared	0.061	0.086	0.033	0.052

Panel C. Comparison of the effects of listing on investment between SPAC firms and traditional IPOs

VARIABLES	(1) d_InvCF_TA	(2) d_InvCF_TA	(3) d_InvOut_TA	(4) d_InvOut_TA	(5) d_InvIn_TA	(6) d_InvIn_TA
SPAC	-17.079***	-18.952***	-16.194***	-15.557***	3.140	5.267
	(2.110)	(2.375)	(4.604)	(5.600)	(3.417)	(4.075)
SPAC*After	17.094***	19.080***	32.361***	29.547***	10.039**	5.042
	(3.454)	(3.807)	(6.884)	(6.582)	(4.184)	(4.225)
lnTA	-7.101***	-6.820***	-11.447***	-12.845***	-3.125**	-5.372***
	(1.002)	(1.031)	(2.214)	(2.456)	(1.499)	(1.787)
Firm_Age	-0.038	0.085	-0.323	-0.199	-0.167	-0.219
	(0.081)	(0.081)	(0.215)	(0.237)	(0.160)	(0.171)
Sales Growth		0.062***		0.079**		-0.022*
		(0.015)		(0.039)		(0.012)
Cash_TA		0.263***		0.307*		-0.057
		(0.068)		(0.165)		(0.102)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	2,771	2,235	2,771	2,235	2,771	2,235
Adj R-squared	0.054	0.079	0.049	0.065	0.030	0.037

Appendix to Chapter 2

[Table 2.A1] Variable list

This table presents the definitions of variables used in this paper.

Variable	Definition
Firm Characteristics	
SPAC	Dummy variable equals 1 for SPAC merger firms and 0 for traditional IPO firms.
Total_Assets	Total Assets (KRW in billions)
lnTA	Natural logarithm of total assets.
EBIT	Earnings before interest and taxes (KRW in billions)
Gross Sales	Sales Revenue (KRW in billions)
lnSales	Natural logarithm of sales revenue.
Sales Growth	Percentage increase in sales revenue compared to the prior year
Cash_TA	Sum of the cash, cash equivalents, and marketable securities divided by total assets (%)
Leverage	Total liabilities divided by total assets (%)
OCF_TA	Cash flows from operating activities divided by lagged total assets (%)
Intan_TA	Intangible Assets divided by total assets (%)
Tech_Firm	Dummy variable equals 1 if a firm operates in high-tech industries and 0 otherwise. Companies with the following 3-digit industry codes belong to the high-tech industries: 261, 262, 263, 264, 272, 612, 620, 631, and 639.
Firm_Age	The difference between the current year and the founding year
VC_Dummy	Dummy variable that equals 1 for VC-backed firms and 0 otherwise.
VC_Ownership_tot	Common stock ownership held by VCs
Financing and Investment	

FinCF_TA	Net cash flows from financing activities divided by total assets (%)
FinIn_TA	Cash inflows from financing activities divided by total assets (%)
Equity Issue_TA	Cash inflows from issuing equity divided by total assets. (%)
ln(Equity Issue)	Natural logarithm of cash inflows from issuing equity
Debt Issue_TA	Cash inflows from issuing debt divided by total assets. (%)
ln(Debt Issue)	Natural logarithm of cash inflows from issuing debt
InvCF_TA	Net cash flows from investing activities divided by total assets (%)
InvOut_TA	Cash outflows from investing activities divided by total assets (%)
InvIn_TA	Cash inflows from investing activities divided by total assets. (%)
Other Variables	
mean_KOSDAQ_252	Average daily return on KOSDAQ for the past 252 business days
sd_KOSDAQ_252	Standard deviation of KOSPI daily return in the last 252 business days

[Table 2.A2] Requirements for listing through SPAC mergers and listing through traditional IPO in KOSDAQ

This table presents private companies' requirements to be listed on the KOSDAQ market. There are different requirements for listing through a merger with SPAC and a traditional IPO. In addition, loose requirements apply to companies assessed as having superior technology.

	SPAC Mergers	Traditional IPO	Exceptions for Technology Assessment
Requirements for Listing (Based on profitability and sales)	(1) At least KRW 2 billion in pre-tax income from continuing operations (2) Positive pre-tax income from continuing operations and at least KRW 10 billion in sales (KRW 5 billion for venture companies)	(1) At least KRW 2 billion in pre-tax income from continuing operations (KRW 1 billion for venture companies) and at least KRW 9 billion in base market capitalization (2) At least KRW 2 billion in pre-tax income from continuing operations (KRW 1 billion for venture companies) and at least KRW 3 billion in equity capital (KRW 1.5 billion for venture companies) (3) Positive pre-tax income from continuing operations and at least KRW 20 billion in base capitalization and at least KRW 10 billion in sales (KRW 5 billion for venture companies) (4) At least KRW 5 billion in pre-tax income from continuing operations	(1) At least KRW 1 billion in equity capital (2) At least KRW 9 billion in base market capitalization

[Table 2.A3] SPAC List

This table provides information on 110 SPACs that completed mergers with unlisted companies from 2010 to 2021. Table A3 contains the following information: the name of the SPAC, the name of the target firm, the establishment and listing date of the SPAC, and the completion date of the merger. In addition, the offer price of one SPAC stock at the time of listing and the total amount raised by SPAC through IPO are presented together. Data were manually collected from the securities issuance report submitted to the Financial Supervisory Service.

Number	SPAC Name	Target Firm's Name	Establishment Date of SPAC	SPAC's Listing Date	Merger Completion Date	Offer Price	Total Proceeds (in KRW billions)
1	Hyundai DreamTogether SPAC	SAMKEE	2009-12-24	2010-03-19	2012-04-12	6,000	20.0
2	Shinhan 1st SPAC	Seojin Automotive	2010-01-19	2010-05-25	2012-04-19	5,000	37.5
3	Kyobo-KTB SPAC	KOREA FUEL-TECH	2010-02-24	2010-08-27	2012-03-02	4,000	25.0
4	Hana Green SPAC	SundayToz	2010-02-25	2010-11-10	2013-11-05	4,000	20.0
5	Shinyoung HappyTomorrow NO.1 SPAC	Alton Sports	2010-03-25	2010-07-02	2011-08-26	1,000	19.7
6	Kiwoom No.1 SPAC	HANIL VACUUM	2010-03-23	2010-10-05	2013-09-04	2,000	20.0
7	HMC-1 SPAC	HWASHIN PRECISION	2010-04-28	2010-08-31	2011-08-17	2,000	23.6
8	E-Trade SPAC 1	HyVISION SYSTEM	2010-04-08	2010-09-10	2012-02-13	2,000	19.0

9	Hi SPAC	DHP KOREA	2010-07-27	2010-12-03	2013-11-29	4,000	27.0
10	KB Global Star Game & Apps SPAC	Rsupport	2010-07-22	2011-01-05	2014-01-07	2,500	20.0
11	Woori SPAC 2	CUBE ENTERTAINMENT	2013-07-25	2013-11-21	2015-04-09	2,000	13.0
12	Kiwoom NO.2 SPAC	SGA Solutions	2013-09-05	2013-12-20	2015-06-16	2,000	13.0
13	Eugene SPAC 1	NANO	2013-10-18	2014-05-08	2015-04-30	2,000	10.0
14	KB No.2 SPAC	KSIGN	2013-12-26	2014-04-28	2014-11-11	2,000	14.8
15	Hana Must SPAC	WOOSUNG I.B.	2014-02-19	2014-06-10	2015-03-25	2,000	5.0
16	Woori SPAC 3	KOREA CEMENT	2014-04-28	2014-08-13	2017-05-15	2,000	13.0
17	MiraeAsset No.2 SPAC	Kolmar BNH	2014-04-22	2014-07-23	2015-02-03	2,000	13.0
18	Shinhan 2nd SPAC	Dream Security	2014-06-25	2014-10-13	2017-01-20	2,000	10.0
19	KB No.3 SPAC	PROSTEMICS	2014-06-25	2014-09-30	2015-10-05	2,000	20.0
20	Hyundai Dream Together 2nd SPAC	STUDIO SANTA CLAUS ENTERTAINMENT	2014-08-12	2014-12-29	2015-09-15	2,000	13.0
21	IBKS No.2 SPAC	GL Pharm Tech	2014-07-29	2014-11-20	2016-10-05	2,000	8.0
22	Kyobo With SPAC	EXEM	2014-08-21	2014-11-07	2015-06-26	2,000	7.8
23	Hi SPAC II	HUMASIS	2014-08-29	2014-12-01	2017-10-17	2,000	10.0
24	KB No.4 SPAC	Action Square	2014-08-27	2014-11-12	2015-10-05	2,000	20.0
25	Korea No.2 SPAC	Benoholdings	2014-09-19	2014-12-10	2015-12-30	2,000	10.0

26	NH SPAC 2nd	Boditech Med	2014-09-30	2014-12-29	2015-09-11	2,000	8.5
27	Dongbu 2nd SPAC	Mr. Blue	2014-10-10	2014-12-12	2015-11-23	2,000	10.0
28	LIG SPAC 2nd	JUNGDAWN	2014-10-20	2014-12-17	2016-06-29	2,000	5.0
29	KB No.5 SPAC	Jiransecurity	2014-09-30	2014-12-24	2016-09-09	2,000	9.1
30	Hana Must 2nd SPAC	SELVAS Healthcare	2014-10-02	2014-12-17	2016-09-13	2,000	10.0
31	KB No.6 SPAC	Thumbage	2014-10-23	2014-12-29	2016-05-13	2,000	30.0
32	Kyobo 3 SPAC	BIOLOG DEVICE	2014-10-23	2014-12-24	2015-12-08	2,000	10.0
33	KTB SPAC 2	CLASSYS	2015-01-15	2015-04-03	2017-12-28	2,000	10.0
34	KB No.7 SPAC	FSN	2015-01-19	2015-03-25	2016-10-05	2,000	8.0
35	Hanwha Ace SPAC 1st	DRTECH	2015-02-03	2015-04-20	2016-12-05	2,000	8.2
36	Eugene ACPC SPAC 2	Hucentech	2015-02-12	2015-04-28	2018-03-23	2,000	10.0
37	Hana Must 4th SPAC	RoboRobo	2015-02-09	2015-04-22	2017-12-19	2,000	5.5
38	Hanwha MGI SPAC	WOOJUNG BIO	2015-02-25	2015-05-18	2017-04-28	2,000	10.0
39	Daewoo SBI SPAC 1	TOEBOX KOREA	2015-02-24	2015-05-13	2017-04-28	2,000	5.5
40	NH SPAC 5th	INNO INSTRUMENT	2015-03-06	2015-05-08	2017-05-08	2,000	13.0
41	Daishin Balance 1st SPAC	Neptune Company	2015-03-19	2015-06-18	2016-12-14	2,000	10.0
42	Hi SPAC III	RUSSELL	2015-03-26	2015-06-16	2018-05-18	2,000	8.5
43	Ebest SPAC 2	CHEMON	2015-03-26	2015-06-26	2017-03-27	2,000	13.0

44	Hanwha ACPC SPAC	Didim	2015-03-30	2015-06-10	2017-08-31	2,000	13.5
45	Hana Must 5th SPAC	MILAE BIORESOURCES	2015-04-06	2015-06-18	2017-12-28	2,000	7.0
46	NH SPAC 8th	RFHIC	2015-04-14	2015-06-30	2017-09-01	2,000	13.0
47	SK No.2 SPAC	DYD DAEYANG	2015-04-22	2015-07-23	2017-02-08	2,000	12.5
48	LIG-ES SPAC	Chemtros	2015-05-14	2015-07-27	2017-10-11	2,000	5.0
49	KTB SPAC 4	MOM'S TOUCH	2015-05-19	2015-08-28	2016-10-06	2,000	12.5
50	Korea No.3 SPAC	Creative & Innovative System	2015-05-22	2015-09-02	2017-01-20	2,000	13.0
51	MiraeAsset No.4 SPAC	CENOTEC	2015-05-27	2015-08-06	2016-07-25	2,000	6.1
52	Kyobo 4 SPAC	Midas AI	2015-06-08	2015-08-13	2016-04-12	2,000	6.0
53	IBKS No.3 SPAC	KMPHARMACEUTICAL	2015-07-10	2015-10-08	2018-09-28	2,000	8.0
54	NH SPAC 9th	NAT GAMES	2015-07-14	2015-09-25	2017-06-12	2,000	15.5
55	Shinyoung HappyTomorrow No.2 SPAC	Fashion Platform	2015-07-15	2015-10-05	2018-02-13	2,000	10.0
56	HMCIB No.3 SPAC	Bonne	2015-07-28	2015-11-05	2018-10-29	2,000	12.0
57	Hyundai Dream Together 4th SPAC	KH E&T	2015-07-28	2015-10-22	2017-12-18	2,000	10.0
58	Dongbu 3rd SPAC	HANSONGNEOTECH	2015-07-30	2015-10-06	2018-06-05	2,000	8.3
59	Goldenbridge No.4 SPAC	N2TECH	2015-09-04	2015-11-18	2018-11-08	2,000	12.5
60	HANA FINANCIAL 7th SPAC	HFR	2015-10-07	2015-12-16	2018-11-15	2,000	12.9
61	IBKS No.4 SPAC	AIIT ONE	2015-10-22	2016-03-02	2016-12-05	2,000	3.5

62	Daishin Balance 2nd SPAC	YIK	2015-10-22	2015-12-24	2017-04-05	2,000	20.0
63	MIRAE ASSET No.5 SPAC	ZUMinternet	2016-02-12	2016-06-09	2019-06-10	2,000	9.0
64	Kyobo BNK SPAC	NAMU TECH	2016-03-30	2016-09-08	2018-12-11	2,000	12.0
65	Hana Financial 8th SPAC	Mobiis	2016-07-01	2016-09-08	2017-03-21	2,000	12.0
66	KB No.10 SPAC	YeSUN Tech	2016-07-15	2016-09-29	2019-09-11	2,000	10.0
67	IBKSGMB SPAC	SEWHA P&C	2016-08-18	2016-11-02	2017-09-19	2,000	10.0
68	Daishin Balance 3rd SPAC	Neosem	2016-09-05	2018-04-04	2019-01-31	2,000	10.0
69	IBKS No.5 SPAC	XAVIS	2016-09-20	2016-12-02	2019-11-15	2,000	8.0
70	NH SPAC 10th	POINT ENGINEERING	2016-10-13	2017-05-02	2019-07-16	2,000	13.0
71	NH SPAC 11th	BNC Korea	2016-10-14	2016-12-28	2019-12-03	2,000	13.0
72	KB No.11 SPAC	SOFTCAMP	2016-11-01	2017-04-27	2019-12-30	2,000	6.0
73	Hana Financial 9th SPAC	DENTIS	2016-12-01	2017-06-26	2020-07-03	2,000	8.0
74	Shinyoung HappyTomorrow No.3 SPAC	UST	2017-01-23	2017-04-06	2018-03-23	2,000	5.0
75	IBKS No.6 SPAC	Elensys	2017-02-10	2017-06-01	2019-12-20	2,000	8.0
76	Kyobo 7 SPAC	Naintech.	2017-03-22	2017-06-22	2020-04-22	2,000	7.6
77	Hana Financial 10th SPAC	G Enone Energy	2017-04-20	2017-08-22	2020-02-04	2,000	8.0
78	NH SPAC 12th	Wise birds	2017-06-01	2017-08-07	2020-08-05	2,000	13.0
79	IBKS No.8 SPAC	INSAN	2017-07-26	2017-09-29	2018-09-11	2,000	4.0

80	Dongbu 5th SPAC	Lake Materials	2017-09-22	2017-12-12	2020-03-23	2,000	8.0
81	Hana Financial 11th SPAC	KAINOS MEDICINE	2017-11-03	2018-06-08	2020-06-08	2,000	9.0
82	Yuanta 3 SPAC	Jeisys Medical	2017-12-01	2018-05-08	2021-03-31	2,000	7.0
83	Samsung SPAC 2	NP	2018-02-06	2018-09-13	2021-08-20	2,000	13.0
84	IBKS No.9 SPAC	ALOYS	2018-04-26	2018-07-20	2019-10-01	2,000	5.0
85	IBKS No.10 SPAC	WSI	2018-05-11	2018-09-21	2020-12-01	2,000	8.0
86	Daishin Balance 5th SPAC	Zinitix	2018-06-26	2018-08-30	2019-07-26	2,000	7.0
87	DB Finance No.6 SPAC	Neontech	2018-08-24	2018-10-31	2020-02-11	2,000	8.0
88	Shinyoung HappyTomorrow No.4 SPAC	IL SCIENCE	2018-08-31	2018-12-21	2019-12-27	2,000	8.5
89	Kyobo 8 SPAC	Wonbiogen	2018-09-03	2018-12-05	2021-02-09	2,000	6.2
90	Daishin Balance 6th SPAC	KUKJEON PHARMACEUTICAL	2018-09-11	2018-12-19	2020-12-30	2,000	9.0
91	Goldenbridge Ian No.5 SPAC	B2En	2018-09-12	2018-12-12	2021-11-18	2,000	8.5
92	SAMSUNG MUST SPAC 3	OHEIM INT	2018-10-11	2018-12-20	2020-12-24	2,000	7.5
93	MiraeAsset Daewoo SPAC 2	ANIPLUS	2018-10-15	2018-12-21	2020-02-07	2,000	5.5
94	Korea No.8 SPAC	DYC	2018-10-22	2018-12-20	2021-12-14	2,000	6.0
95	Hi SPAC IV	TS Trillion	2019-01-11	2019-04-29	2020-12-30	2,000	8.0
96	NH SPAC 14th	HUYNDAI MOVEX	2019-02-18	2019-05-08	2021-03-12	2,000	16.0
97	Hana Financial 13th SPAC	WINTEC	2019-03-05	2019-09-18	2020-08-06	2,000	6.0

98	Eugene SPAC 4	PRO2000	2019-03-13	2019-05-31	2021-10-27	2,000	6.5
99	DB Finance No.7 SPAC	COPUS KOREA	2019-04-01	2019-05-31	2020-12-28	2,000	8.0
100	Shinhan 5th SPAC	MFM KOREA	2019-04-04	2019-06-19	2020-12-30	2,000	8.0
101	Eugene SPAC 5	FOCUS HNS	2019-07-10	2019-10-02	2021-10-27	2,000	7.0
102	MiraeAsset Daewoo SPAC 4	IL SEUNG	2019-08-07	2019-11-06	2021-05-17	2,000	8.1
103	IBKS No.11 SPAC	VIOL	2019-09-02	2019-12-03	2020-11-26	2,000	9.0
104	NH SPAC 15th	IBKIMYOUNG	2019-10-11	2019-12-24	2020-10-13	2,000	12.0
105	Yuanta 6 SPAC	DAVOLINK	2019-10-17	2019-12-19	2021-08-13	2,000	13.0
106	Hanwha Plus No.1 SPAC	SERIM B&G	2019-10-17	2019-12-27	2021-12-09	2,000	8.0
107	IBKS No.14 SPAC	Solution Advanced Technology	2020-03-06	2020-06-22	2021-12-09	2,000	8.0
108	NH SPAC 16th	Hurum	2020-03-31	2020-06-17	2021-07-27	2,000	7.5
109	NH SPAC 17th	C&R Research	2020-06-18	2020-09-23	2021-12-17	2,000	12.0
110	Daishin Balance 7th SPAC	BLITZWAY	2020-10-20	2020-12-23	2021-12-23	2,000	7.0

[표 3.1] CEO 국적 분포 상위 10개국

　　[표 3.1]은 미국 CEO 들의 조상들이 이민 해 온 국가를 성(Last Name)을 통해 추정한 결과를 제시한다. 본 연구의 표본 기간은 1992 년부터 2017 년까지이며, ExecuComp 데이터베이스에서 CEO 의 이름 전체 (Full Name)를 확인할 수 있었던 기업들만 분석의 대상으로 삼았다. 이민자가 이민 온 국가에 대한 정보는 1820~1957 년 사이 뉴욕 항을 통해 이민 온 승객들의 탑승자 명단 정보를 통해 수집 하였다. 본 연구의 표본 내에는 5,879 명의 CEO 가 존재한다. 대부분의 성의 경우, 해당 성을 가진 이민자가 여러 국가에서 이민을 왔다. 이러한 점을 감안하여, 편의 상 [표 3.1]에서는 가장 많은 이민자가 이민 온 국가를 기준으로 성과 출신 국가를 대응시켰다. 단, 각 성 별로 해당 성을 가진 이민자의 30% 이상을 차지하는 출신 국가가 복수로 존재하는 경우, 이러한 성에 대해서는 두 국가의 국적을 모두 부여하였다. 따라서 대응된 국가의 개수는 6,532 개로 CEO 의 수보다 더 많다. [표 3.1]의 상대 도수는 대응된 CEO 의 수를 기준으로 계산되었다.

국가명	도수	상대 도수
잉글랜드	2,476	37.91%
독일	932	14.27%
아일랜드	864	13.23%
이탈리아	546	8.36%
스코틀랜드	387	5.92%
이스라엘	372	5.70%
러시아	341	5.22%
프랑스	226	3.46%
네덜란드	211	3.23%
폴란드	103	1.58%

[표 3.2] 장기 지향성 점수의 분포

　　[표 3.2]는 GLOBE 에서 측정한 장기 지향성 점수(LTOS)의 분포를 보여준다. 패널 A 는 GLOBE 조사의 대상이었던 62 개국 중 27 개 국가의 장기 지향성 점수를 선별적으로 제시한다. 점수가 높을수록 장기 지향적인 문화를 가진 국가이다. 패널 B 는 각 문화권 별 장기 지향성 점수를 제시한다. GLOBE 는 언어, 지리적 여건, 종교, 역사적 사건 등을 고려하여 세계의 국가들을 10 개의 지역 문화권으로 분류하고 있다. 이 분류에 근거하여, 각 문화권에 속하는 국가들의 장기 지향성 점수 평균을 산출하였다. 패널 C 는 각 산업 별로 측정한 CEO 들의 장기 지향성 점수 평균을 제시한다. 산업의 분류는 North American Industry Classification System 의 2-digit code 를 기반으로 이루어졌다.

패널 A. 국가 별 장기 지향성 점수

국가명	장기 지향성 점수
싱가포르	5.068
스위스	4.731
덴마크	4.444
캐나다	4.436
일본	4.289
영국	4.279
독일	4.266
인도	4.193
미국	4.152
나이지리아	4.093
호주	4.090
한국	3.970
대만	3.956

멕시코	3.866
이스라엘	3.850
브라질	3.810
카타르	3.778
중국	3.745
터키	3.743
이란	3.701
스페인	3.507
프랑스	3.478
태국	3.425
그리스	3.402
이탈리아	3.253
아르헨티나	3.080
러시아	2.877

패널 B. 문화권 별 장기 지향성 점수의 분포

독일계 유럽		북유럽		동아시아		영미권		남아시아	
N	mean	N	mean	N	mean	N	mean	N	mean
5	4.404	3	4.356	6	4.176	8	4.147	5	4.041
사하라 이남 아프리카		라틴계 유럽		중동		라틴아메리카		동유럽	
N	mean	N	mean	N	mean	N	mean	N	mean
4	3.744	6	3.678	6	3.601	10	3.536	9	3.406

패널 C. 산업 별 CEO들의 평균 장기 지향성 점수

산업	관측치 수	평균 장기 지향 점수
광업	1,790	4.12
제조업	18,504	4.03
교통, 통신, 전기, 가스, 위생 서비스	2,382	4.10
도매 유통	1,385	4.04
소매 유통	3,587	4.04
서비스	6,376	4.04
기타	871	4.07
총계	34,895	4.04

[표 3.3] 기초 통계량

[표 3.3]은 본 연구에서 사용된 변수들에 대한 기초 통계량을 제시한다. 본 연구의 설명 변수인 *LTOS* 는 성을 통해 포착한 CEO 의 장기 지향성 점수를 의미한다. *LTOS* 의 구체적인 측정 방법은 2 절에 설명되어 있다.   *UA_H, PD_H, LTO_H* 는 Hofstede(2001)의 문화 지표를 통해 구성된 변수들로써, 성을 통해 포착한 CEO 의 불확실성 회피도, 권력 거리도, 장기 지향 정도를 각각 의미한다. GLOBE 와 Hofstede 에서 측정하는 장기(미래) 지향성은 이름은 유사하지만, 구체적인 내용에서 차이가 있으며 양자 간 상관관계도 없다. (Hofstede et al., 2010) *CAPX_AT* 는 총자산 대비 자본적 지출의 비율, *ACQ_AT* 는 총자산 대비 인수. 합병 금액의 비율을 의미한다. *ACQ_Dummy* 는 $1 백만 이상을 M&A 에 지출했으면 1, 아니면 0 의 값을 갖는 더미 변수이며, *ACQ_more5* 는 총자산 대비 5% 이상의 금액을 M&A 에 지출했으면 1 의 값을 갖는 더미 변수이다. *RD_AT* 는 총자산 대비 R&D 지출의 비율이며, *RD_Sales* 는 매출액 대비 R&D 지출의 비율, *RD_Dummy* 는 R&D 에 비용을 지출했으면 1 의 값을 갖는 더미변수이다. *Tobinq* 는 Compustat 의 항목들을 다음과 같이 이용하여 구한 Tobin's Q 이다: [AT+(CSHO × PRCC_F)-CEQ]/AT. *FirmSize* 는 총 자산의 자연 로그 값이며, *FirmAge* 는 기업의 영업 년 수를 나타낸다. *OCF_AT* 는 총자산 대비 영업활동으로 인한 현금흐름의 비율이며, *Cash_AT* 는 총자산 대비 현금 및 현금성 자산의 비율로 정의된다. *NWC_AT* 는 총자산 대비 순운전자본의 비율, *SalesGrowth* 는 전년 대비 매출액 성장률, *LEVERAGE* 는 총자산 대비 부채 비율이다. *GDPGrowth* 는 전년도 대비 실질 GDP 의 성장률이며, *Election* 은 Julio and Yook(2006)의 정의에 따라 회계연도 말일을 기준으로 대통령 선거가 -60~+274 일 사이에 있을 때 1 의 값을 갖는 더미 변수이다. *LogEPU* 는 Baker et al. (2016)이 정치적 불확실성을 측정하기 위해 사용했던 변수로서 신문 보도들의 기사에 등장하는 불확실성과 관련된 단어들을 이용하여 도출된다. *MacroUncertainty* 는 Jurado et al. (2015)이 거시 경제의 불확실성을 측정하기 위해 만들었던 변수로서 경제 시계열 자료들의 예측 오차를 이용한다. *CEO_Female* 은 CEO 가 여성일 때 1의 값을 갖는 더미 변수이며, *CEO_Tenure* 는 CEO 로서 재직하고 있던 기간을 나타낸다. *CEO_Age* 는 CEO 의 나이, *CEO_Delta* 와 *CEO_Vega* 는 각각 CEO 의 주가에 대한 보수 민감도와 주가 변동성에 대한 부의 민감도를 나타낸다. (Core and Guay, 2002) *CEOFounder* 는 CEO 가 창업자일 때 1 의 값을 갖는 더미 변수이며, *SameContinent_FirstName* 은 CEO 의 성(Last Name)과 이름(First Name)이 같은 문화권에서 유래했을 때 1 의 값을 갖는 더미 변수이다. *Immigrant* 는 CEO 가 이민 1 세대일 때 1 의 값을 갖는 더미 변수이다. 모든 비율 변수는 연도별로 1%와 99% 수준에서 winsorize 하였다.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	N	mean	sd	p10	p25	p50	p75	p90

Main Explanatory Variables

LTOS	34,895	4.044	0.287	3.554	3.990	4.156	4.213	4.250
UA_H	33,830	51.848	14.888	37.563	39.076	45.750	63.857	73.996
PD_H	33,830	40.215	9.058	33.199	35.694	37.563	40.888	50.828
LTO_H	33,830	47.536	12.586	33.124	39.456	44.324	55.761	66.808

Dependent Variables

CAPX_AT (%)	34,895	6.588	6.927	1.235	2.306	4.358	8.104	14.230
ACQ_AT (%)	34,788	2.544	12.508	0	0	0	0	5.351
ACQ_Dummy	34,788	0.164	0.370	0	0	0	0	1
ACQ_more5	34,788	0.103	0.304	0	0	0	0	1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	N	mean	sd	p10	p25	p50	p75	p90
RD_AT (%)	34,895	3.429	6.055	0	0	0.236	4.394	11.200
RD_Sales (%)	34,895	5.459	14.485	0	0	0.216	5.089	15.696
RD_Dummy	35,045	0.513	0.500	0	0	1	1	1
Control Variables- Firm								
Tobinq	34,895	2.091	1.370	1.028	1.246	1.650	2.393	3.664
FirmSize	34,895	7.239	1.623	5.292	6.113	7.102	8.243	9.434
FirmAge	34,874	24.479	19.329	5	10	19	33	51
OCF_AT (%)	34,895	11.279	10.623	0.640	5.976	10.815	16.518	23.415
Cash_AT (%)	34,887	15.821	17.728	0.970	2.730	8.962	22.841	41.694
NWC_AT (%)	33,941	7.644	15.225	-9.877	-1.921	6.786	16.896	27.257
SalesGrowth (%)	34,895	12.273	28.245	-11.698	-0.477	7.714	18.966	38.593
Leverage (%)	34,762	54.718	80.014	19.314	34.522	53.582	71.472	90.284

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	N	mean	sd	p10	p25	p50	p75	p90

Control Variables- Macro

GDPGrowth	34,895	2.536	1.585	1	1.800	2.700	3.800	4.400
Election	34,895	0.257	0.437	0	0	0	1	1
LogEPU	34,895	4.679	0.274	4.329	4.421	4.696	4.937	5.025
MacroUncertainty	34,895	0.907	0.045	0.863	0.874	0.900	0.916	0.944

Control Variables- CEO

CEO_Female	34,895	0.023	0.149	0	0	0	0	0
CEO_Tenure	33,971	8.022	7.498	1	3	6	11	18
CEO_Age	34,827	55.556	7.679	46	51	56	60	65

CEO_Delta	33,742	1,087.606	11,011.126	22.298	66.649	184.341	523.951	1,387.540
CEO_Vega	33,614	119.429	286.777	0	8.476	37.553	115.596	295.775
CEOFounder	19,322	0.145	0.352	0	0	0	0	1
SameContinent_FirstName	17,466	0.279	0.449	0	0	0	1	1
Immigrant	7,422	0.159	0.366	0	0	0	0	1

[표 3.4] CEO 의 장기 지향성과 자본적 지출 간 상관 관계

[표 3.4]는 성을 통해 포착한 CEO 의 장기 지향성과 기업의 자본적 지출 사이의 상관 관계를 제시한다. 종속 변수인 *CAPX_AT* 는 총자산 대비 자본적 지출의 비율이며, 설명 변수인 *LTOS* 는 성을 통해 포착한 CEO 의 장기 지향성 점수를 의미한다. 식 (1)- (3)은 산업 고정 효과와 연도 고정 효과를 고려하고 있으며, 식 (4)-(5)는 산업 고정 효과만을 고려하는 대신 거시 경제 변수들과 불확실성 변수를 포함한다. 거시 변수로는 전 년도 대비 실질 경제성장률인 *GDPGrowth* 와 대통령 선거 유무를 나타내는 *Election* 더미 변수가 포함된다. 불확실성을 통제하기 위해 식 (4)에서는 Baker et al. (2016)이 제안한 불확실성 지표 EPU 의 로그 값인 *logEPU* 가 사용되었으며, 식 (5)에서는 Jurado et al. (2016)이 개발한 불확실성 지표 *MacroUncertainty* 를 사용하였다. 식 (3)- (5)는 다음과 같은 CEO 들의 개인적 특성들을 추가로 통제한다: CEO 의 성별(*CEO_Female), CEO 의 재직 년 수 (CEO_Tenure)*, CEO 의 나이 (*CEO_Age*), CEO 보수의 주가에 대한 민감도 (*CEO_Delta)*, CEO 의 주가 변동성에 대한 부의 민감도 (*CEO_Vega)*. 괄호 안의 숫자는 회귀계수의 기업-연도별 이중군집표준오차(double-clustered standard error by firm and year)이다. *와 **, ***는 각각 10%, 5%, 1% 수준에서 통계적으로 유의함을 의미한다.

VARIABLES	(1) CAPX_AT	(2) CAPX_AT	(3) CAPX_AT	(4) CAPX_AT	(5) CAPX_AT
LTOS	0.638***	0.423**	0.464**	0.554**	0.574**
	(0.208)	(0.203)	(0.205)	(0.209)	(0.210)
FirmSize	-0.110*	-0.224***	-0.196***	-0.230***	-0.244***
	(0.057)	(0.052)	(0.055)	(0.058)	(0.059)

FirmAge	-0.037***	-0.018***	-0.015***	-0.019***	-0.020***
	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)
Tobinq		0.116	0.101	0.101	0.088
		(0.076)	(0.080)	(0.090)	(0.092)
OCF_AT		0.141***	0.144***	0.143***	0.145***
		(0.010)	(0.010)	(0.010)	(0.010)
SalesGrowth		0.046***	0.044***	0.046***	0.047***
		(0.004)	(0.004)	(0.004)	(0.004)
Observations	34,874	31,109	29,184	29,184	29,184
R-squared	0.347	0.444	0.447	0.420	0.419
Fixed Effect	Industry & Year	Industry & Year	Industry & Year	Industry	Industry
Year the CEO was replaced	Included	Excluded	Excluded	Excluded	Excluded
Macro Variables	X	X	X	O	O
Uncertainty Measure	X	X	X	EPU (Baker et al.)	UM (Jurado et al.)
Other CEO Characteristics	X	X	O	O	O

[표 3.5] CEO 의 장기 지향성과 인수. 합병 간 상관 관계

[표 3.5]는 성을 통해 포착한 CEO 의 장기 지향성과 기업의 인수. 합병 사이의 상관 관계를 제시한다. 식 (1)- (4)의 종속 변수인 *ACQ_AT* 는 총자산 대비 인수. 합병 금액의 비율이다. 식 (5)와 (7)의 종속 변수인 *ACQ_Dummy* 는 $1 백만 이상을 M&A 에 지출했으면 1, 아니면 0 의 값을 갖는 더미 변수이며, 식 (6)과 (8)의 종속 변수인 *ACQ_more5* 는 총자산 대비 5% 이상의 금액을 M&A 에 지출했으면 1 의 값을 갖는 더미 변수이다. 설명 변수인 *LTOS* 는 성을 통해 포착한 CEO 의 장기 지향성 점수를 의미한다. 식 (1)-(6)은 OLS 회귀 분석의 결과이며, 식 (7)-(8)에서는 로지스틱 회귀 분석을 수행하였다. 식 (1)- (3)은 산업 고정 효과와 연도 고정 효과를 함께 고려하고 있으며, 식 (4)-(8)은 산업 고정 효과만을 고려하는 대신 거시 경제 변수들과 불확실성 변수를 포함한다. 포함된 거시 변수는 [표 3.4]의 식 (4)-(5)와 동일하며, Baker et al. (2016)이 제안한 *logEPU* 를 통해 불확실성을 통제한다. 식 (3)- (8)에서는 〈표 4〉의 식 (3)-(5)에서 사용된 것과 동일한 CEO 특성 변수들이 추가로 통제된다. 괄호 안의 숫자는 회귀계수의 기업-연도별 이중군집표준오차(double-clustered standard error by firm and year)이다. *와 **, ***는 각각 10%, 5%, 1% 수준에서 통계적으로 유의함을 의미한다.

VARIABLES	(1) ACQ_AT	(2) ACQ_AT	(3) ACQ_AT	(4) ACQ_AT	(5) ACQ_Dummy	(6) ACQ_more5	(7) ACQ_Dummy	(8) ACQ_more5
LTOS	0.571*	0.664**	0.803**	0.800**	0.021***	0.014*	0.154***	0.138*
	(0.285)	(0.289)	(0.296)	(0.306)	(0.007)	(0.007)	(0.052)	(0.071)
FirmSize	0.309***	0.250**	0.299**	0.314**	0.030***	0.007***	0.222***	0.081***
	(0.085)	(0.108)	(0.118)	(0.119)	(0.002)	(0.002)	(0.012)	(0.019)
FirmAge	-0.039***	-0.017***	-0.018***	-0.018***	-0.001***	-0.001***	-0.006***	-0.009***
	(0.006)	(0.004)	(0.004)	(0.004)	(0.000)	(0.000)	(0.001)	(0.001)
Tobinq		0.016	0.027	0.091	-0.003	-0.000	-0.028	-0.009
		(0.195)	(0.203)	(0.211)	(0.003)	(0.003)	(0.022)	(0.026)
OCF_AT		0.022	0.020	0.020	0.002***	0.001***	0.014***	0.015***
		(0.021)	(0.022)	(0.023)	(0.000)	(0.000)	(0.002)	(0.002)
SalesGrowth		0.080***	0.082***	0.079***	0.001***	0.001***	0.008***	0.009***
		(0.010)	(0.010)	(0.011)	(0.000)	(0.000)	(0.001)	(0.001)
Leverage		0.007	0.007	0.012	-0.000	0.000**	-0.000	0.003**
		(0.007)	(0.008)	(0.008)	(0.000)	(0.000)	(0.001)	(0.001)
Cash_AT		4.902***	5.053***	4.954***	0.245***	0.214***	0.176***	0.212***
		(0.891)	(0.923)	(0.963)	(0.035)	(0.023)	(0.020_AT)	(0.022)
NWC_AT		-0.019*	-0.019	-0.021*	-0.000*	-0.000*	-0.002	-0.003*
		(0.010)	(0.011)	(0.011)	(0.000)	(0.000)	(0.002)	(0.002)
Observations	31,013	28,176	26,548	26,548	26,548	26,548	26,417	26,192
R-squared	0.024	0.062	0.063	0.058	0.075	0.056		
Pseudo R-squared							0.081	0.078
Fixed Effect	Industry & Year	Industry & Year	Industry & Year	Industry	Industry	Industry	Industry	Industry
Macro Variables	X	X	X	O	O	O	O	O
Other CEO Characteristics	X	X	O	O	O	O	O	O

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[표 3.6] CEO 의 장기 지향성과 R&D 투자 간 상관 관계

[표 3.6]은 성을 통해 포착한 CEO 의 장기 지향성과 기업의 R&D 비용 지출 사이의 상관 관계를 제시한다. 식 (1)-(3)의 종속 변수인 *RD_AT*는 총자산 대비 R&D 지출 비용의 비율이다. 식 (4) 의 종속 변수인 *RD_Sales* 는 매출액 대비 R&D 지출 비용의 비율이며, 식 (5)의 종속 변수인 *RD_Dummy* 는 R&D 에 비용을 지출했으면 1 의 값을 갖는 더미 변수이다. 설명 변수인 *LTOS* 는 성을 통해 포착한 CEO 의 장기 지향성 점수를 의미한다. 식 (1)-(4)는 OLS 회귀 분석의 결과이며, 식 (5)에서는 로지스틱 회귀 분석이 수행되었다. 식 (1)-(2)는 산업 고정 효과와 연도 고정 효과를 함께 고려하고 있으며, 식 (3)-(5)는 산업 고정 효과만을 고려하는 대신 거시 경제 변수들과 불확실성 변수를 포함한다. 포함된 거시 변수는 [표 3.4]의 식 (4)-(5)와 동일하며, Baker et al. (2016)이 제안한 *logEPU*를 통해 불확실성을 통제한다. 식 (3)-(5)에서는 〈표 4〉의 식 (3)-(5)에서 사용된 것과 동일한 CEO 특성 변수들이 추가로 통제된다. 괄호 안의 숫자는 회귀계수의 기업-연도별 이중군집표준오차(double-clustered standard error by firm and year)이다. *와 **, ***는 각각 10%, 5%, 1% 수준에서 통계적으로 유의함을 의미한다.

VARIABLES	(1) RD_AT	(2) RD_AT	(3) RD_AT	(4) RD_Sales	(5) RD_Dummy
LTOS	1.011***	0.628**	0.573**	1.179*	0.443**
	(0.268)	(0.228)	(0.226)	(0.635)	(0.177)
FirmSize	-0.711***	-0.482***	-0.577***	-1.096***	0.068
	(0.088)	(0.073)	(0.082)	(0.235)	(0.052)
FirmAge	-0.016***	-0.014***	-0.013***	-0.051***	0.006*
	(0.005)	(0.004)	(0.004)	(0.009)	(0.004)
Tobinq		0.936***	0.892***	2.133***	0.294***
		(0.079)	(0.079)	(0.209)	(0.054)
OCF_AT		-0.145***	-0.145***	-0.553***	-0.032***
		(0.011)	(0.012)	(0.056)	(0.005)
SalesGrowth		-0.001	0.000	0.026***	0.001
		(0.003)	(0.003)	(0.006)	(0.001)
Leverage		-0.026***	-0.028***	-0.052***	-0.015***
		(0.004)	(0.004)	(0.014)	(0.003)
Cash_AT		0.724***	0.686***	1.590***	0.235***
		(0.050)	(0.051)	(0.147)	(0.043)
NWC_AT		-0.091***	-0.087***	-0.258***	-0.021***
		(0.008)	(0.008)	(0.028)	(0.005)
Observations	31,109	28,196	26,553	26,553	24,113
R-squared	0.349	0.493	0.495	0.428	
Pseudo R-squared					0.481
Fixed Effect	Industry & Year	Industry & Year	Industry	Industry	Industry
Year the CEO was replaced	Excluded	Excluded	Excluded	Excluded	Excluded
Macro Variables	X	X	O	O	O
Other CEO Characteristics	X	X	O	O	O
Coefficient Estimates	OLS	OLS	OLS	OLS	Logit

[표 3.7] 이민 1 세대 여부가 CEO 의 장기 지향성과 투자와의 상관관계에 미치는 영향 분석

　　[표 3.7]에서는 성을 통해 포착한 CEO 의 장기 지향성과 기업의 각종 투자 간 상관 관계가 이민 1 세대 CEO 에게서 더 강하게 나타나는지 확인한다. 식 (1)- (2)에서는 총자산 대비 자본적 지출의 비율인 *CAPX_AT* 가 종속 변수로 사용된다. 식 (3)-(4)에서는 총자산 대비 인수. 합병 금액인 *ACQ_AT* 가 종속 변수이며, 식 (5)-(6)의 종속 변수인 *RD_AT* 는 총자산 대비 R&D 지출 비용의 비율이다. 설명 변수인 *LTOS* 는 성을 통해 포착한 CEO 의 장기 지향성 점수를 의미한다. *Immigrant* 는 CEO 가 이민 1 세대일 때 1 의 값을 갖는 더미 변수이다. *High_LTOS* 는 장기 지향성 점수가 표본 내에서 상위 30%에 속하는 CEO 가 재직하고 있으면 1 의 값을 갖는 더미 변수이다. [표 3.7]의 모든 식은 산업 고정 효과와 연도 고정 효과를 함께 고려한다. 기업의 규모(*FirmSize),* 영업 년사(*FirmAge),* Tobin's Q (*Tobinq*), 매출액 성장률(*SalesGrowth*), 부채비율(*Leverage),* 현금 및 현금성 자산 비율(*Cash_AT),* 순운전자본 비율(*NWC_AT*)가 모든 식에서 통제된다. 또한 다음과 같은 CEO 들의 개인적 특성들도 모든 식에서 통제된다: CEO 의 성별(*CEO_Female),* CEO 의 재직 년 수(*CEO_Tenure),* CEO 의 나이 (*CEO_Age*), CEO 보수의 주가에 대한 민감도 (*CEO_Delta*), CEO 의 주가 변동성에 대한 부의 민감도 (*CEO_Vega*). 괄호 안의 숫자는 회귀계수의 기업-연도별 이중군집표준오차(double-clustered standard error by firm and year)이다. *와 **, ***는 각각 10%, 5%, 1% 수준에서 통계적으로 유의함을 의미한다.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	*CAPX_AT*	*CAPX_AT*	*ACQ_AT*	*ACQ_AT*	*RD_AT*	*RD_AT*
LTOS	0.787**		0.707		0.480*	
	(0.366)		(0.428)		(0.272)	

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High_LTOS		0.848***		0.005		0.212
		(0.281)		(0.261)		(0.177)
Immigrant		−0.425		−0.308		−0.216
		(0.375)		(0.447)		(0.504)
High_LTOS * Immigrant		1.260**		1.040*		0.683*
		(0.509)		(0.541)		(0.397)
Observations	6,812	6,812	6,812	6,812	6,812	6,812
R-squared	0.517	0.523	0.108	0.108	0.535	0.537
Fixed Effect	Industry & Year	Industry & Year	Industry & Year	Industry & Year	Industry & Year	Industry & Year
Year the CEO was replaced	Excluded	Excluded	Excluded	Excluded	Excluded	Excluded
Control Variables	O	O	O	O	O	O

[표 3.8] 성과 동일한 문화권에서 유래한 이름 사용 여부가 CEO 의
장기 지향성과 투자와의 상관관계에 미치는 영향 분석

[표 3.8]에서는 성을 통해 포착한 CEO의 장기 지향성과 기업의 각종 투자 간 상관
관계가 성과 동일한 문화권에서 유래한 이름(First Name)을 사용하는 CEO 에게서 더
강하게 나타나는지 확인한다. 식 (1)- (2)에서는 총자산 대비 자본적 지출의 비율인
$CAPX\_AT$ 가 종속 변수로 사용된다. 식 (3)-(4)에서는 총자산 대비 인수. 합병 금액인
ACQ_AT 가 종속 변수이다. 설명 변수인 $LTOS$ 는 성을 통해 포착한 CEO 의 장기
지향성 점수를 의미한다. $SameContinent\_FirstName$ 은 CEO 의 성(Last Name)과
이름(First Name)이 같은 문화권에서 유래했을 때 1 의 값을 갖는 더미 변수이다. [표
3.8]의 모든 식은 산업 고정 효과와 연도 고정 효과를 함께 고려한다. 다음과 같은
기업의 특성 변수들이 모든 식에서 통제된다: 규모($FirmSize$), 영업 년 수($FirmAge$),
Tobin's Q ($Tobinq$), 매출액 성장률($SalesGrowth$), 부채비율($Leverage$), 현금 및 현금성
자산 비율($Cash\_AT$), 순운전자본 비율(NWC_AT). 다음과 같은 CEO 들의 개인적
특성들도 모든 식에서 통제된다: CEO 의 성별(CEO_Female), CEO 의 재직 년 수
(CEO_Tenure), CEO 의 나이 (CEO_Age), CEO 보수의 주가에 대한 민감도 (CEO_Delta),
CEO 의 주가 변동성에 대한 부의 민감도 (CEO_Vega). 괄호 안의 숫자는 회귀계수의
기업-연도별 이중군집표준오차(double-clustered standard error by firm and year)이다.
*와 **, ***는 각각 10%, 5%, 1% 수준에서 통계적으로 유의함을 의미한다.

VARIABLES	(1) CAPX_AT	(2) CAPX_AT	(3) ACQ_AT	(4) ACQ_AT
LTOS	0.566**	0.321	0.596*	0.358
	(0.268)	(0.262)	(0.344)	(0.310)
SameContinent_FirstName		-6.914**		-2.473
		(2.822)		(3.995)
LTOS * SameContinent_FirstName		1.813**		1.718*
		(0.753)		(0.836)
Observations	15,453	15,453	14,036	14,036
R-squared	0.437	0.441	0.050	0.056
Fixed Effect	Industry & Year	Industry & Year	Industry & Year	Industry & Year
Year the CEO was replaced	Excluded	Excluded	Excluded	Excluded
Control Variables	O	O	O	O

[표 3.9] 창업자 여부가 CEO의 장기 지향성과 자본적 지출과의 상관관계에 미치는 영향 분석

[표 3.9]에서는 성을 통해 포착한 CEO의 장기 지향성과 기업의 자본적 지출 간 상관 관계가 창업자 CEO에게서 더 강하게 나타나는지 확인한다. 총자산 대비 자본적 지출의 비율인 *CAPX_AT*가 종속 변수로 사용된다. 설명 변수인 *LTOS*는 성을 통해 포착한 CEO의 장기 지향성 점수를 의미한다. *CEOFounder*는 CEO가 창업자일 때 1의 값을 갖는 더미 변수이다. 식 (1)-(5)는 산업 고정 효과와 연도 고정 효과를 함께 고려하고 있으며, 식 (6)-(7)은 산업 고정 효과만을 고려하는 대신 거시 경제 변수들과 불확실성 변수를 포함한다. 포함된 거시 변수는 [표 3.4]의 식 (4)-(5)와 동일하며, Baker et al. (2016)이 제안한 *logEPU*를 통해 불확실성을 통제한다. 식 (4)-(8)에서는 ⟨표 4⟩의 식 (3)-(5)에서 사용된 것과 동일한 CEO 특성 변수들이 추가로 통제된다. 괄호 안의 숫자는 회귀계수의 기업-연도별 이중군집표준오차(double-clustered standard error by firm and year)이다. *와 **, ***는 각각 10%, 5%, 1% 수준에서 통계적으로 유의함을 의미한다.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	CAPX_AT	CAPX_AT	CAPX_AT	CAPX_AT	CAPX_AT	CAPX_AT	CAPX_AT
LTOS	0.389	0.236		0.243		0.356	
	(0.254)	(0.258)		(0.256)		(0.257)	
CEOFounder		-5.071		-6.087*		-5.623	
		(3.359)		(3.541)		(3.522)	
LTOS * CEOFounder		1.502*	0.241***	1.816*	0.306***	1.768*	0.372***
		(0.845)	(0.074)	(0.885)	(0.084)	(0.882)	(0.084)
FirmSize	-0.224***	-0.205***	-0.205***	-0.148**	-0.149**	-0.190**	-0.191***
	(0.063)	(0.062)	(0.062)	(0.068)	(0.068)	(0.068)	(0.068)

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FirmAge	-0.013***	-0.010**	-0.010**	-0.007	-0.007	-0.010**	-0.010**
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)
Tobinq	-0.067	-0.081	-0.082	-0.074	-0.075	-0.099	-0.100
	(0.089)	(0.088)	(0.088)	(0.092)	(0.091)	(0.103)	(0.103)
SalesGrowth	0.037***	0.037***	0.036***	0.034***	0.034***	0.036***	0.036***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)
OCF_AT	0.148***	0.149***	0.150***	0.150***	0.150***	0.150***	0.151***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.012)	(0.012)
Observations	17,026	17,026	17,026	16,140	16,140	16,140	16,140
R-squared	0.491	0.494	0.494	0.499	0.498	0.482	0.481
Fixed Effect	Industry & Year	Industry & Year	Industry & Year	Industry & Year	Industry & Year	Industry	Industry
CEO Characteristics	X	X	X	O	O	O	O
Macro variables	X	X	X	X	X	O	O

[표 3.10] CEO 의 장기 지향성과 투자와의 상관관계 분석: 다른 문화적 차원의 추가적 고려

    [표 3.10]에서는 성을 통해 포착한 CEO 의 장기 지향성과 기업의 각종 투자 간 상관 관계가 Hofstede(2001)에서 제시한 다른 문화적 차원을 통제한 가운데서도 유지되는지 확인한다. 식 (1)-(4)에서는 총자산 대비 자본적 지출의 비율인 *CAPX_AT* 가 종속 변수로 사용된다. 식 (5)-(6)에서는 총자산 대비 인수. 합병 금액인 *ACQ_AT*가 종속 변수이며, 식 (7)-(8)의 종속 변수인 *RD_AT*는 총자산 대비 R&D 지출 비용의 비율이다. 설명 변수인 *LTOS*는 성을 통해 포착한 CEO 의 장기 지향성 점수를 의미한다. *UA_H, PD_H, LTO_H* 는 Hofstede(2001)의 문화 지표를 통해 구성된 변수들로써, 성을 통해 포착한 CEO 의 불확실성 회피도, 권력 거리도, 장기 지향 정도를 각각 의미한다. 식 (1)- (3), 식 (5), 식 (7)은 산업 고정 효과와 연도 고정 효과를 함께 고려하고 있으며, 식 (6)과 식 (8)은 산업 고정 효과만을 고려하는 대신 거시 경제 변수들과 불확실성 변수를 포함한다. 포함된 거시 변수는 [표 3.4]의 식 (4)-(5)와 동일하며, Baker et al. (2016)이 제안한 *logEPU* 를 통해 불확실성을 통제한다. 식 (4)-(8)에서는 〈표 4〉의 식 (3)-(5)에서 사용된 것과 동일한 CEO 특성 변수들이 추가로 통제되며, 다음과 같은 기업의 특성 변수들도 통제된다: 규모(*FirmSize),* 영업 년 수(*FirmAge*), Tobin's Q (*Tobinq*), 매출액 성장률(*SalesGrowth*), 부채비율(*Leverage*), 현금 및 현금성 자산 비율(*Cash_AT*), 순운전자본 비율(*NWC_AT*). 괄호 안의 숫자는 회귀계수의 기업-연도별 이중군집표준오차(double-clustered standard error by firm and year)이다. *와 **, ***는 각각 10%, 5%, 1% 수준에서 통계적으로 유의함을 의미한다.

VARIABLES	(1) CAPX_AT	(2) CAPX_AT	(3) CAPX_AT	(4) CAPX_AT	(5) ACQ_AT	(6) ACQ_AT	(7) RD_AT	(8) RD_AT
LTOS	0.706*	0.735**	0.634**	0.743*	0.534	0.453	1.088**	0.872**
	(0.401)	(0.298)	(0.244)	(0.397)	(0.326)	(0.352)	(0.423)	(0.365)
UA_H	0.002			-0.007	0.001	-0.007	0.001	-0.006
	(0.008)			(0.007)	(0.008)	(0.007)	(0.008)	(0.007)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PD_H		0.002						
		(0.010)						
LTO_H			-0.008					
			(0.006)					
FirmSize	-0.131**	-0.131**	-0.132**	-0.348***	0.329***	0.335***	-0.702***	-0.572***
	(0.058)	(0.057)	(0.057)	(0.064)	(0.085)	(0.120)	(0.089)	(0.082)
FirmAge	-0.037***	-0.037***	-0.037***	-0.020***	-0.041***	-0.021***	-0.016***	-0.013***
	(0.005)	(0.005)	(0.005)	(0.004)	(0.006)	(0.004)	(0.005)	(0.004)
Observations	30,161	30,161	30,161	25,782	30,120	25,777	30,161	25,782
R-squared	0.360	0.360	0.360	0.440	0.024	0.057	0.346	0.494
Fixed Effect	Industry & Year	Industry & Year	Industry & Year	Industry	Industry & Year	Industry	Industry & Year	Industry
CEO Characteristics	X	X	X	O	X	O	X	O
Macro variables	X	X	X	O	X	O	X	O
Other control variables	X	X	X	O	O	O	O	O

[Figure 1.1] Cumulative abnormal return after the announcement of the Ausgliederung

This figure represents the cumulative abnormal return for the next 20 days from the announcement of the *Ausgliederung*. The Cumulative Abnormal return was calculated using CAPM.

CAR
(%)

Days
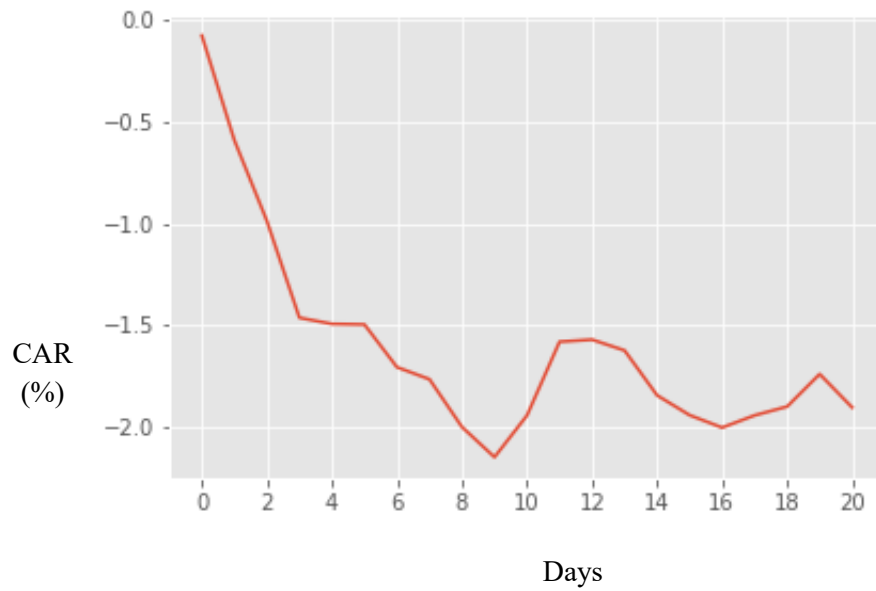
[Figure 2.1] SPACs and Traditional IPOs and listed on the KOSDAQ exchange

This figure displays the number and gross proceeds of SPAC mergers and traditional IPOs by year from 2010 to 2021. The orange line represents the number of firms listed through traditional IPOs in the year, and the blue line represents the number of firms listed through mergers with SPAC. The yellow bars are the gross proceeds of firms listed through traditional IPOs in the year, and the gray bars are the gross proceeds of SPAC targets. Data is obtained from Korea Financial Supervisory Service.
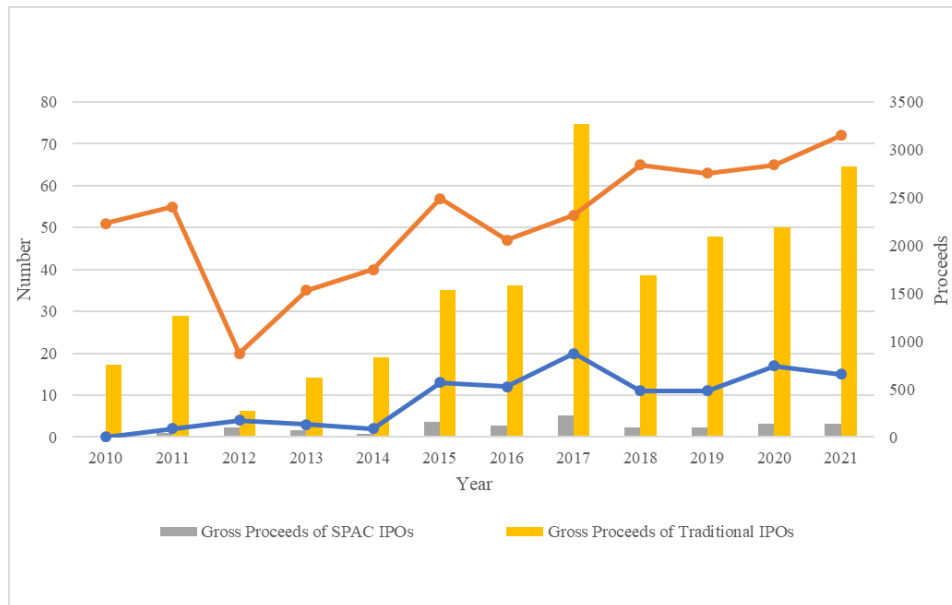
[Figure 2.2] Timeline of the major events in the life cycle of a Korean SPAC

This figure presents the general process that Korea's SPACs go through, from listing to finding a suitable target firm and completing the merger.

Pre-business combination								
SPAC IPO	➡	SPAC searches for acquisition targets	➡	SPAC and target negotiate terms	➡	Letter of intent (LOI) executed	➡	Definitive agreement executed

Pre-business combination				Business Combination (Up to 3-5 months)		Post-business combination (ongoing)
➡ SPAC merger reviewed by Financial Supervisory Service	➡	SPAC shareholders vote and approve	➡	Merger transaction consummated	➡	Target becomes a public company

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[그림 3.1] 1820-1957년 뉴욕 항을 통해 입국한 승객들의 탑승자 명단

  [그림 3.1]은 1820-1957년 사이 뉴욕 항을 통해 입국한 승객들의 탑승자 명단을 제공하는 ancestry.com의 홈페이지 화면이다. 해당 데이터베이스를 통해 승객의 성과 이름, 미국에 도착한 날짜, 출생 연도, 출발지, 인종 및 국적, 탑승한 배의 이름, 그리고 탑승자 명단 원본을 확인할 수 있다. 또한 검색 창에 성을 입력하면, 해당 성을 가진 입국자의 정보만을 따로 확인할 수 있다.

[그림 3.2] 표본 내 장기 지향성 점수의 분포

 [그림 3.2]는 본 연구의 표본 내 장기 지향성 점수의 분포를 나타낸 히스토그램이다. 본 연구의 표본 기간은 1992 년부터 2017 년까지이며, ExecuComp 데이터베이스에서 CEO 의 이름 전체 (Full Name)를 확인할 수 있었던 기업들만 분석의 대상으로 삼았다.
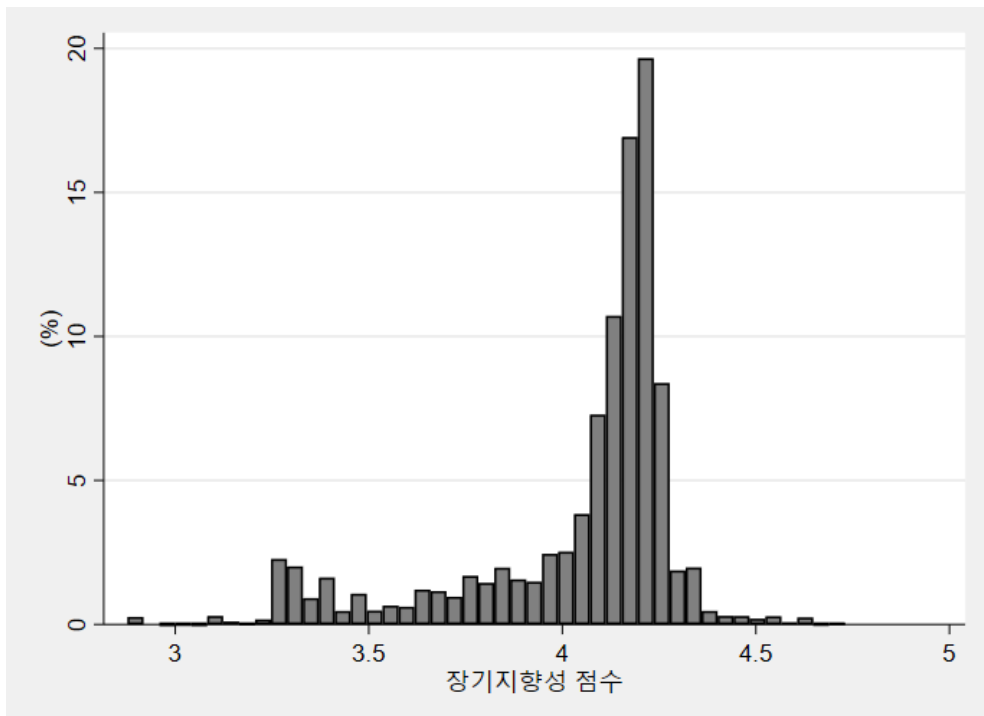
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국문초록

기업재무에 관한 연구

본 논문은 기업재무에 관한 3개의 소 논문으로 구성되었다. 첫 번째 소 논문에서는 물적분할 회사의 분할 이후 자금조달과 투자 결과를 분석한다. 분할 모회사와 신설 자회사의 짝으로 구성된 "Pair"는 다른 상장 기업에 비해 유상증자로 더 많은 자금을 조달하고, 더 많이 투자한다. 이 결과는 모회사가 아니라, 상대적으로 규모가 작은 신설 자회사에 의해 야기된다. 또한, 투자의 증가는 신설 자회사가 자본 집약도가 높고 투자를 많이 하는 산업에 속해 있을 때 더욱 두드러진다. 물적분할은 지배권을 유지하면서도 투자에 필요한 자본 조달을 할 수 있는 기회를 지배주주에게 제공한다. 그러나 모회사의 비지배주주들은 자회사가 미래에 만들어낼 이익을 새로운 주주들과 나누어야 하기에, 분할 공시에 부정적으로 반응한다.

두 번째 소 논문은 기업인수목적회사(이하 SPAC)와의 합병을 통해 우회상장한 기업들을 전통적인 기업공개를 통해 상장한 기업들과 비교하여, 그들의 상장 전 특성과 상장 이후 자금 조달 및 투자를 분석한다. SPAC을 통한 우회상장을 택한 비상장 기업들은 전통적 기업공개를 택한 비상장 기업들에 비해 총자산의 규모가 작고, 매출액이 적으며, 이익이 적다. 그러나 상장 이후에는 전자의 기업들이 후자의 기업들보다 재

무 활동을 통해 더 많은 현금을 조달하며, 순투자도 더 많이 증가한다. 이러한 결과는 SPAC이 정보 비대칭이 심한 비상장기업이 자본 시장에 접근할 수 있도록 돕는 순기능을 담당하고 있음을 시사한다.

세 번째 소 논문에서는 성(Last Name)을 통해 포착한 CEO의 장기지향성이 투자 의사 결정에 미치는 영향을 탐구하였다. 성은 부계 혈통을 따라 후손들에게 계승되기에, 개인의 의사 결정 체계에 영향을 미치는 문화적 유산(cultural heritage)을 탐구할 수 있는 기회를 제공한다. 장기 지향성이 높은 문화권의 성을 가진 CEO가 재직하는 미국 기업들은 총자산의 크기에 대비하여 1) 자본적 지출을 더 많이 하고 2) 인수를 더 많이 하며 3) R&D 활동에도 더 많은 비용을 지불한다. 이러한 결과는 CEO가 이민자일 때, 그리고 CEO가 창업자일 때 더욱 강하게 나타난다. 본 연구의 결과는 CEO의 경제적 선호에 영향을 미치는 것으로 알려진 다른 문화적 요인들을 통제한 가운데에서도 동일하게 유지된다.

주요어: 물적분할, 완전자회사, 피라미드 기업집단, 기업인수목적회사(SPAC), 장기지향성, 투자의사결정

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