REVISITING CONCEPTUAL FRAMEWORK OF GOVERNANCE & FINANCIAL FACTORS IN REVERSE MERGER PERFORMANCE

Umi Kulsum *, Sudarso Kaderi Wiryono **, Yunieta Anny Nainggolan **

* Corresponding author. School of Business and Management, Bandung Institute of Technology, Indonesia
** School of Business and Management, Bandung Institute of Technology, Indonesia
Contact details: School of Business and Management, Bandung Institute of Technology, Jl. Ganeca No.10, Bandung 40132, Indonesia

Abstract

The performance of reverse takeover firms or reverse merger firms have been studied in correlation to traditional initial public offering (IPO) performance. However, those studies have not been extensive enough to explain the contributing factors of the reverse merger performance. Some of the previous studies have compared the implication of corporate governance attributes and the implication of the financial conditions of the involving firms to the reverse merger firm performance. However, there are more areas to be assessed in the perspective of corporate governance, including the variety of ownership structure and its effect on the risk-taking behavior and reputation. This study proposes a new conceptual model on how corporate governance and financial characteristics influence the reverse merger performance, constructed from the literature review. The conception of the reverse merger characteristics and how they are associated with the firm performance is expected to support investor in their investment decision.

Keywords: Reverse Takeover, Reverse Merger, Initial Public Offering (IPO), Corporate Governance, Corporate Finance

1. INTRODUCTION

According to Arellano-Ostoa and Brusco (2002), a reverse merger is a practice in which a private firm is acquired by a public shell via stock swap that allows the private firm to go public. Feldman (2006) stated that a reverse merger arises when private firm merges with a public firm with no business purpose, which is called a "shell." After a reverse merger, the private firm becomes a public firm at once. The "reverse" term is known for the reason that though the public shell acquires the private firm, but actually, it is the private firm that survives and the owner of a private firm is the one who controls the survival firm.

Private firms can take advantages from the reverse merger as an alternative way to go public, such as lower cost, a faster process when compared to IPOs (Feldman, 2006; Das, 2013; Ojha et al., 2013; Kyfonidou, 2012). Furthermore, it involves less dilution and does not need underwriters (Feldman, 2006). Another benefit is that the private firm can avoid the initial listing requirements (Arellano-Ostoa & Brusco, 2002). This intention to escape from the requirements is evidenced by Song et al. (2014). The study mentioned that a great number of private firms have chosen reverse takeovers to go public due to the stringent listing criteria in Korea Stock Exchange. In the other hand, there are disadvantages such as less funding and less market support (Feldman, 2006), the risk of damaging financial statements or lawsuits that may arise from the non-clean shell and potential problem that may arise from the reputation damage (Arellano-Ostoa & Brusco, 2002).

Recent studies suggest that the performance of the reverse merger is convincingly generated by the governance features than on the financial conditions of the shell firm and the private firm (Jambal et al., 2012; Kim et al., 2015). This paper will broaden the
previous studies in order to better explain the predictors of reverse merger performance, particularly whether the risk-taking behavior and the reputation will affect the reverse merger performance through a different type of ownership. These factors are presumably relevant in the emerging market, where the conglomerate ownership is commonly found and influence the risk-taking behavior of the board. The theoretical approach is used to develop a conceptual framework.

The paper consists of the literature review, the conceptual frameworks, and conclusion. An overview of the recent development of studies in reverse merger survival and performance is presented in Section 2. It also demonstrates the determining factors that have been examined in different studies in some countries. In Section 3, financial characteristics, ownership structures, and board characteristics are explored to construct the conceptual framework of the reverse merger survival and performance. Section 4 wraps up the paper.

2. LITERATURE REVIEW

2.1. Survival of reverse merger firms

Studies in the U.S. found that the reverse merger survivability is lower than their IPO peers (Adjei et al., 2008). The result of the studies seems sensible, as, in common perception, the marginal firms will have difficulties to fulfill the initial listing requirements and most likely cannot fulfill the continuous listing requirements. These firms will consider reverse merger as an alternative way to go public. However, the higher survival rate is shown by the study in the U.K. (Faelten et al., 2014). The unique characteristic in the U.S. market mainly generated by significant numbers of Chinese reverse merger compared to any other countries. In recent years, financial reporting problems and class action against Chinese reverse merger firms have attracted attention from researchers to study the performance.

The study of 52 reverse mergers conducted in the U.S. between 1990 and July 2000 by Arellano-Ostoa and Brusco (2002) found that 32.6% of firms after reverse merger transaction were eliminated from the stock market. By the observation of 121 reverse mergers in the U.S. between 1987 and 2001, Gleason et al. (2005) found small post-transaction progress in the business or profitability, and only 46% of the reverse takeover sample still exists in 2 years. It means that 52% or 63 firms fail to exist in 2 years after the transaction. Specifically, the non-survival sample firms were delisted, acquired, went bankrupt, participated in another reverse takeover, or taken private. The study also found that prior distressed condition of the public firms tends to lead to the failure of the new firm and it is an essential factor for the survival probability.

Gleason et al. (2006), using a sample of 127 reverse takeover firms in the U.S., found that reverse takeover firms have a substantially lower return on asset in the year of going public, but show similarity in return on equity than the IPO peers in the same year. In addition, reverse takeover firms show substantially lower accounting liquidity, the higher chance of financial difficulty and higher financial leverage than the IPO peers. In two years after going public, reverse takeover firms are less profitable in terms of return on asset, have substantially less accounting liquidity and have a lower price-to-sales ratio than the IPO peers. Contrarily, their return on equity, financial leverage and price-to-book ratio are no different than the IPO peers.

The study by Adjei et al. (2008) also found the reverse merger firms survive for shorter periods of time than IPO firms. They found that 42% of reverse merger firms are eliminated from the stock market compared to 27% of IPO peers eliminated within 3 years after the transaction, by using reverse merger and IPO samples in the U.S. from the period of January 1990 until December 2002. The most possible delisting period for reverse merger firm is the 24th month with 5.69% delisting probability, while the possible delisting period for the IPO firm is a 37th month with 5.12% delisting probability. In Asia, using 129 reverse merger firms in Korea, Han and Kwon (2015) found that 24.8% of reverse merged firms were eliminated from the stock market because of poor post-performance.

However, there is a different outcome in the U.K. According to the study conducted by Faelten et al. (2014), using the data sample of 243 reverse mergers and 1,643 IPOs in the U.K. between 1995 and 2012, the survival rate for reverse mergers is notably superior to their U.S. peers. The survival rate of reverse mergers after three years is relatively high (80%), slightly below the equivalent rate for IPOs (90%). According to the study, synergy motivation contributes to a significant proportion of reverse takeover in the UK. The transaction is undertaken when firms looking for expansion through simultaneously conducting a synergistic acquisition and a listing in the stock market. These firms are often actively participating in acquisitions and equity offerings soon after their listing in the stock market.

2.2. Determinants of reverse merger survival and performance

Jambal et al. (2012) examined 124 total sample of reverse takeovers in the U.S. during the period of 2000-2009, and found that 64% cases survived in the course of 3 years after the reverse merger, and the rest of 36% failed, either delisted, bankrupt, or acquired by the new firm. It is also found that reverse merger firms have a tendency to survive when the shell interest coverage ratio is higher, while the return on equity of shell is lower prior to the reverse merger and the shell is relatively greater than the new firm. It indicates that survival is more likely when the public shell is not distressed. This finding is consistent with the study by Gleason et al. (2005), that shells with bad performance are more possible to collapse than survive. Additionally, the study advises that mutual firms are more probable to survive when public firms with poor financial performance become the object of reverse merger for healthier private firms, which aim to be listed.

In practice, reverse mergers usually involve the change of core business and the firm’s name. The relationship between the changes of core business and the performance of the reverse merger has been examined in correlation to the intention of the
reverse merger. As mentioned by Faeltan et al. (2014), the reverse mergers involving actively listed firms to gain synergy perform better than just acquiring Special Purpose Acquisition Companies (SPACs) or non-operating and distressed shells. Among surviving reverse merger firms identified by Gleason et al. (2005), 52% were remaining in the former business as either or both parents, 33% operating in complementary business, and almost 15% moving into another business. According to the study, distressed firms that maintain the public firm’s name and use private capital have a lower probability of surviving, and functional firms that maintain the public firms’ name or participate in private placements have a higher probability of surviving.

The study by Jambal et al. (2012) suggests that in order to have successful reverse mergers, firms should also apply particular corporate governance practice. Despite that the Chief Executive Officer (CEO) with a lot of previous experience in the public firm is expected to have a valuable contribution to the firm performance, the study found that firms without CEO replacement are unlikely to survive than the firms with CEO replacement, while the shell has lesser liquidity. It implied that keeping the previous CEO will decrease the probability of survival after the reverse merger. This finding requires further study to explain how firm financial performance correlates with the previous CEO leading to a failure of the firm after the reverse merger. The study also suggests that there is a concave relation between the average new firm’s board duration and the probability of survival. It indicates that if the duration of the new firm’s board becomes too extensive, the board may not perform at their best. Considering that most of the reverse mergers involve a change in the line of business, it is reasonable that the officers should be replaced by the more experienced professionals.

Similarly, Kim et al. (2015) suggest that the reverse mergers survival convincingly generated by the governance attributes than on the financial attributes of the shell firm and the private firm. The study used 137 reverse mergers sample in the U.S. during 1997-2009. They consider the ratio of the sum of EBIT and depreciation to interest expenses of the public shells (shell interest coverage ratio), the ratio of cash to total asset of the public shells (shell cash liquidity) and profitability, new reverse merger firm’s cash liquidity, logarithm of the total asset of the new firm (proxy of new firm size), and the ratio of new firm size to public shell size (proxy of private firm size) as the financial condition variables, while they also consider dummy variables of CEO founder, CEO shell, CEO ownership (the portion of CEO ownership of a new firm after the transaction), number of board member, and board tenure as the corporate governance variables.

The ownership structure is another aspect that has been studied in relation to the reverse merger performance. A study by Han and Kwon (2015) in Korea concluded that high ownership concentration alleviates poor post-performance and improves the survivability of reverse merger firms. The successful reverse merger also supported by the existence of the venture-owners (Jambal et al., 2012). Disclosure quality is another factor that has been examined related to the reverse merger performance. According to Mitton (2002), firms with superior disclosure quality are tending to have better valuation. Chu et al. (2014) concluded that the existence of a big 4 auditors is involved in improving the earnings quality and survival of the reverse merger firms nearly twice as much than for reverse merger firms audited by other auditors.

The progression of reverse merger survival and performance studies is summarized in Table 1.

<table>
<thead>
<tr>
<th>Authors (year) and title</th>
<th>Purpose</th>
<th>Features</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arellano-Ostoa and Brusco (2002)</td>
<td>To addresses the companies’ preference on reverse merger as opposed to IPO</td>
<td>- Quality of the firms</td>
<td>- Firms in lower class decide to have reverse mergers instead of IPOs</td>
</tr>
<tr>
<td>Gleason et al. (2005)</td>
<td>To examine the impact of the reverse takeover on the short and long terms performances</td>
<td>- Access to capital</td>
<td>- Reverse takeovers provide an alternative mechanism of going public but they are unsuccessful to bring a long-term return</td>
</tr>
<tr>
<td>Gleason et al. (2006)</td>
<td>To examine the features of firms exercising reverse takeovers</td>
<td>- Profitability - Liquidity - Debt - Trading liquidity and volatility - Institutional ownership</td>
<td>Compare to IPO firms, the firms that prefer reverse takeover tend to: - inferior in profitability comparing to IPO firms - have extensively inflated debt - have weakened profitability and liquidity - have lower trading liquidity - have significantly higher volatility - have significantly lower institutional ownership - outperform in the short term</td>
</tr>
<tr>
<td>Adjej et al. (2008)</td>
<td>To examine the survival of reverse merger firms and IPO firms in the aftermarket</td>
<td>- Firm size - Firm performance - Firm age</td>
<td>- Smaller, weaker performance and newer private firms prefer reverse mergers to IPOs - Survival of reverse merger firms is inferior to the survival of the IPO firms - The chance of delisting time of reverse firm is shorter than IPO firm</td>
</tr>
</tbody>
</table>
This study employs a systematic literature review to find the factors affecting reverse merger performance. The assessment of the previous study of reverse merger performance is essential to find the gaps in the studies. Furthermore, the assessment of the study of the firm performance, in general, is needed to find other relevant aspects and forecast the association between these variables and the reverse merger performance. Lastly, a comprehensive conceptual approach is built based on the literature assessment.

3. CONCEPTUAL FRAMEWORKS

3.1. Financial characteristics

Previous studies examine the involvement of prior distressed condition of the public firms to the failure of the new firm and the survival probability

<table>
<thead>
<tr>
<th>Authors (year) and title</th>
<th>Purpose</th>
<th>Features</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Jambal et al. (2012)     | To examine the involvement of the financial and governance features to the reverse mergers’ survival | - Financial characteristics (shell interest coverage ratio, cash liquidity, shell ROE, size multiple)  
- Board characteristics (founder CEO, CEO replacement, the board size, average board term, outside director)  
- Ownership structure (outside block holder, venture owner) | - Reverse takeover firms are tending to maintain their existence when the shells have a higher interest coverage ratio, the shells are larger than the private acquirers, and the firms appoint new CEOs  
- The correlation of average board term and the survival probability of reverse merger firms is concave  
- Survival is subject to financial conditions of the merging firms and on the governance features which is assumed to improve their value |
| Faelten et al. (2014)    | To explore how the underlying motivation for the transaction can affect the success of the reverse takeover | - Size of deals  
- Underlying motivation | - Smaller reverse takeovers outperform their larger peers  
- Synergy is the most successful mode of reverse takeover motivation |
| Appadu et al. (2014)     | To examine the characteristics, motivation, follow-on corporate activity and market performance after a reverse takeover | - Underlying motivation  
- Corporate actions (acquisitions and equity offerings) | - Reverse takeover with synergy motivation is actively employed in acquisitions and equity offerings after listing in the stock exchange  
- U.K. reverse takeovers survive longer than their US counterparts |
| Chu et al. (2014)        | To examine the involvement of the location, audit quality and equity issuance to the earnings quality of reverse merger firms | - Disclosure Corporate actions (equity offerings) | - Big 4 auditors employment has a contribution to creating higher earnings quality and survival rate  
- Earnings management is pervasive for reverse merger firms that are distributing additional equity after the transaction |
| Kim et al. (2015)        | To examine the involvement of the financial and governance features to the reverse mergers’ survival | - Financial characteristics (shell interest coverage ratio, cash liquidity, shell ROA, shell return volatility, size multiple)  
- Board characteristics (founder CEO, CEO replacement, staggered board, average board term, outside director)  
- Ownership structure (CEO ownership, outside block holder, venture owner) | - Firms with enhanced corporate governance practices tend to maintain their existence after the transaction  
- CEO ownership, staggered board, and venture ownership have a positive impact on the ability of the reverse merger firms to survive  
- The correlation of average board term and the survival probability of reverse merger firms is concave  
- Survival is subject to financial conditions of the merging firms and on the governance features which is assumed to improve their value |
| Han and Kwon (2015)      | To examine the implications of ownership structure on the performance of reverse merger firms after the transaction | - Financial characteristics (total assets, cash to assets, ROA, debt to assets)  
- Ownership structure (largest shareholders change)  
- Board characteristics (management reorganization plan, reorganization of directors, the resignation of prior directors) | - Despite that a reverse merger statement increases returns, some of the reverse merger firms experience poor post-performance and are delisted due to the agency problem  
- Concentrated ownership alleviates weak performance after the transaction and escalates the survivability of reverse merger firms |
after the reverse merger. According to Jambal et al. (2012), most of the public firms participating in reverse takeovers experience negative profit, and some have a significant depreciation cost. Therefore, the average return on asset (ROA) of the public firms is negative. Gleason et al. (2006) found that reverse takeover firms have a substantially lower return on an asset in the year of going public, but show no difference in return on equity than the IPO peers in the same year. In addition to the study, reverse takeover firms show substantially lower accounting liquidity, the higher chance of financial difficulty and higher financial leverage than the IPO peers. The study also stated that by two years after going public, reverse takeover firms are less profitable in terms of return on asset, have substantially less accounting liquidity and have a lower price-to-sales ratio than the IPO peers. Contrarily, their return on equity, financial leverage and price-to-book ratio are no different than the IPO peers.

In the reverse merger transaction, typically there is no extra fund inflowing the firm. Further fundraising activities should be carried out to get additional capital for expanding the business. Though the relation of the fundraising activity with the probability of success is not significant, Gleason et al. (2005) mentioned that the probability of success of the reverse takeover is improved significantly when a functional firm uses the private fund to raise capital. The study indicates that the fundraising activity is expected to have a positive influence on firm performance.

The role of disclosure quality in predicting the reverse merger performance has also been examined in the previous study. According to Chu et al. (2014), the existence of a big 4 auditors is involved in improving the earnings quality and survival of the reverse merger firms.

### 3.2. Ownership structures

Kim et al. (2015) suggest that the reverse mergers survival convincingly generated by the governance attributes than on the financial attributes of the shell firm and the private firm. The result implies that firms with enhanced corporate governance practices tend to maintain their existence after the transaction. A study by Han and Kwon (2015) in Korea concluded that concentrated ownership alleviates weak performance after the transaction and escalates the survivability of reverse merger firms, while Jambal et al. (2012) concluded that the successful reverse merger also supported by the existence of the venture-owners. However, another type of ownership, conglomerator ownership, to be particular, is important to be scrutinized as this type of ownership is commonly found in emerging markets. A study by La Porta et al. (1999) on listed firms found that family control is usually observed in countries with inferior shareholder protection while the more dispersed shareholders are more common in countries with enhanced shareholder protection.

The ownership structure of most listed firms in emerging markets is highly concentrated (Utama et al., 2017). In accordance with the agency theory (Jensen & Meckling, 1976) high-ownership concentration can minimize agency problems. However, investors should be aware that in the firms with high-ownership concentration such as in the family-owned firms, investor protection becomes important as the controlling shareholders may take the possession of minority shareholders’ and creditors’ rights.

The agency theory approach is relevant to the fact that some other studies conclude that the firms have expected to be better in the firm with the founder controlled (Barontini & Caprio, 2006), foreign ownership (Douma et al, 2006; Kao et al., 2018; Saini & Singhania, 2018; Hai et al., 2018), family-controlled (Maury, 2006; Ciftci et al., 2019), institutional ownership (Cornett et al., 2007; Lin & Fu, 2017; Kao et al., 2018), concentrated ownership (Bruton et al., 2010; Ciftci et al., 2019), and multi large shareholders (Attig et al., 2013). Furthermore, Gaur and Gupta (2011) that group affiliated firms performed better than unaffiliated firms.

Previous studies have explored the involvement of the change of ownership and board, as often seen in the reverse merger practice, to the risk-taking behavior of the firm. According to Wiseman and Gomez-Mejia (1998), risk-taking behavior of manager diverges across and within various practices of controlling and agents may show risk-seeking or risk-averse behaviors. Relevant to the study, Xiao et al. (2001) mentioned that family owners tend to be risk tolerant. In the other hand, Bromley (1991) mentioned that poor performance firms will likely to increase risk-taking, and the risk-taking will lead to further poor performance. The shell firms in the reverse merger transaction often challenged by the financial distress condition, which will drive the firms to make necessary actions to survive.

The study by Memili et al. (2010) indicates that risk-taking is not the only factor contributed to the firm performance. Correspondingly, family firm reputation shows an important role in firm performance. Reverse merger process often involves a change of ownership, change in business activity, change of board and change in a firm’s name. According to Wu (2010), firms change the name to improve the stakeholders’ view after the firms’ reputation has weakened. The most popular practice of the modification is transforming the name to a famous trademark. Another practice of the modification is to minor change to broaden their business focus or insert words to their names with the intention to concentrate on a specific business. The study suggests that the strength of the performance bounded to transformation in the business target that is represented by the modification of name. Additionally, the reputation of the acquirer has a good implication on the merger and acquisition value-creation (Chalencon et al., 2017).

### 3.3. Board characteristics

Previous studies have examined the consequences of board aspects such as board size, board compensation, board’s age, board’s gender diversity, board activity, and foreign board member to the firm performance. A larger board in the firms will be on lessening the firm value (Yermack, 1996; Eisenberg, 1998; Bonn et al., 2004; Cheng, 2008; Kao et al., 2018). The board activity, represented by the occurrence of the board meeting is also expected to deteriorate the value of the firm (Vafeas, 1999). CEO compensation is related to an underperformed firm (Core et al., 1999; Brick et al., 2006). The director’s
age has a negative correlation with performance (Bonn et al., 2004). Adams and Ferreira (2009) concluded that the impact of gender diversity on the board is negative. Foreign board members will have a positive influence on the firm value (Oxelheim & Randøy, 2003). On the other side, Vafeas and Theodoru (1998) did not detect any important relation between director affiliation and ownership, chairman affiliation, and structure of committee with firm performance.

Based on the review of literature, a set of frameworks are employed for modeling how the financial, governance and other features determine the reverse merger performance, as seen in Figure 1.

**Figure 1.** Conceptual framework of the reverse merger survival and performance

In order to verify the framework, a series of quantitative analysis could be employed. Statistical methodology, such as multivariate analysis and chi-square statistic, is considerable to examine the significance of the factors in the model and examine whether these factors will affect the survival and the performance of reverse merger. Auxiliary qualitative analysis is possible to be exercised to confirm the result.

4. CONCLUSION

Theoretically, this study offers a comprehensive idea of the variables affecting reverse merger survival and performance. Consistent with previous studies, the framework consists both of financial and governance features. As an enhancement of previous studies in the similar topic, the conglomerate and family ownership in the firm after the reverse merger play an important role in shaping the firm performance after the reverse merger, particularly in emerging markets. Additionally, the business strategy has a strategic part in the performance. It includes how the relationship between the new principal and agent will affect the risk-taking behavior and how the new principal influences the reverse merger firms’ reputation.

This paper is expected to contribute to the scholarly literature by integrating preceding studies of reverse mergers; its demonstration to explore the comprehensive justification of determining factors in the area of financial characteristics, ownership structure, and board characteristics. The examination leads to discover the novel determining factors that the scholars should take into account in the future study of reverse merger survival and performance. The understanding of the ownership structure will lead to risk-taking behavior and firm reputation. The conglomerate and family ownership of the private firm involved in the reverse merger, as commonly found in the emerging market, could become significant attributes that in the end alter the survival and performance of reverse merger.

The study acknowledges its limitation. The conceptual framework constructed in this study has not been assessed in the empirical studies. Further quantitative or qualitative studies are necessary to verify the framework. Future research may find the finest methodology to verify the framework. Other opportunities available for research include the addition of other governance features. In conclusion, it is expected that the study could have benefit for the researchers, scholars, and practitioners to advance their understandings regarding the characteristics of reverse merger survival and performance and how determining factors may apply. Furthermore, the conception of the reverse merger characteristics and how they are associated with the firm performance is expected to support investor in their investment decision.