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Valuation Methods of Mergers and Acquisitions through Fintech perspective: based on corporate strategies and sectors

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Abstract

One of the main characteristics of businesses in the contemporary world is dynamics, therefore managers of organizations in order to achieve their organizational goals, including survival, profitability, value creation and fill the gap between R&D and commercialization of innovation uses mergers and acquisitions methods.

The most important part of mergers and acquisitions that can guarantee its success is valuation. Corporate valuation is considered one of the most complex and difficult issues in financial management called the "Dark Side" of valuation by Aswath Damodaran. There are a variety of ways to value a company.

Since most valuation research is based on the type and method of valuation, in this paper, we considered the main methods of business valuation based on corporate strategies and sectors market as well as considering the Fintech phenomenon. Finally, we tried to determine which method would be suitable in M&A.

Keywords

Corporate strategies, Fintech, Mergers and Acquisitions, Valuation.

1. Introduction

One of the key features of corporate structural change is the combination of business units that may take place in the form of merger, acquisition, consolidation, and takeover. Such mergers have played an important role in the external growth of some of the leading companies around the world (Pandey, 1999). The synergies acquired from combining innovation capabilities are significant to stimulate acquisitions (Bena and Li, 2014). The current economic conditions under which Iran is facing a shortage of foreign currency to import goods, restrictive policies stemming from privatization and globalization, have fueled an increase in business risks and posed serious threats to the long-term survival of companies. As a result, mergers and acquisitions (M&As) in the oil, gas, textile, insurance, banking, and conglomerates can reduce concerns about economic risks and guarantee their chances of survival.

Valuation is considered to be a major issue in M&A that ensures the success of such transactions if they have the correct information and use the same industry and business practices; otherwise, they are doomed to failure(Aydin,2017). Corporate valuation is considered one of the most complex and difficult issues in financial management called the “Dark Side” of valuation by Aswath Damodaran. Corporate executives are faced with plenty of options and challenges for corporate valuation as there are various ways to determine the value of a company.

Over the past decades, Fintechs principally concentrated on traditional financial institutions by using new technological methods (Graetz et al., 2017). On the other hand, increasing Fintech companies and obligatory regulations for them in comparison to traditional ones affect the valuation methods (Burden, 2017; Michaels & Homer, 2018; Arner, Barberis, & Buckley, 2018). Another necessity of this research is that investors may also comprehend that acquiring the company pays numerous prices for the Fintech target as a result of inaccurate valuation, resulting in non-positive or no remarkable stock response (Roll, 1986).

Since most valuation research is based on the type and method of valuation, in this research, an attempt has been made to discuss a new classification based on corporate strategies and market segments as well as considering the Fintech phenomenon.

2. Theoretical Foundations

2.1. Value and Price

First, we need to define the terms "value" and "price". Price is the amount paid for the acquisition of a good or service and may not necessarily reflect the value of that good or service. Price can vary depending on supply and demand as well as economic and political conditions. In other words, the price may be higher than the value of the goods or services paid for. At M&As, there may also be a significant difference between the value of a company and the price paid for it. The important point here is to determine the real value of the company. The more accurate and realistic the valuation, the more accurate the price paid(Aydin,2017). There are different valuation methods used differently depending on the circumstances. For example, if a company has low profitability and yet high value permanent current assets, they become more important in the valuation process.

2.2. Valuation Theory

Since valuation and evaluation are of paramount importance in the M&A process, valuation theory is widely used as a basic theory in explaining, analyzing, and applying clear-purpose M&A strategies. For example, based on this theory, companies consider acquisitions made by managers who are more aware of the stock market about the potential value of the target company (Ravenscraft and Scherer, 1987). The assumes that the company has valuable and unique information to enhance the total value of businesses through a merger, acquisition, and diversification of businesses that have potential value and create value by combining these businesses. The difference between the valuation theory and other merger explanations is its recognition of the role which genuine uncertainty plays in strategic decisions such as mergers. The problem with assessing the valuation

theory's validity is that it is not possible to derive any specific propositions about merger results (Trautwein, 1990)

2.3. Valuation Process

As previously mentioned, one of the most important factors in the success and failure of M&As depends on its valuation process. The purchase price and the share of each party in M&A are determined by a rational and accurate valuation. Valuation acts as an intermediary link between evaluation and decision-making, i.e., pricing (Shleifer & Vishny,1988).

The first and foremost step to be taken in this process is to identify the company and its strategies. In the Methodology section, the valuation of companies will be explained based on corporate strategies.
The valuation process can be plotted as follows:

Figure 1: Valuation Process

2.4. The Fintech phenomenon

Fintech is a new sector in the finance industry that constitutes an association of finance and technology in financial services. Various explanations have been determined for Fintech(Tsipi,2020). One of them is:

Fin-tech is a combined word of 'financial' and 'technology' referring to the financial services where various technologies have been newly introduced such as bank transfer, personal financial asset management, mobile payment, etc(Kang et al., 2016). Not only has the funding volume at Fintech companies developed significantly in recent years (Li, Spigt & Swinkels, 2017) but also the merger and acquisition (M&A) targeting Fintech enterprise has risen extremely. As the KPMG (2018) report has acknowledged the M&A activity of Fintech enterprises in the United States was ramping up during the last years, this article focuses on valuation the most serious part of M&As.

3. Research Background

Most empirical studies have shown that the main reason behind the failure of M&As that were expected to be successful was the misvaluation (incorrect valuation) of the company (Agrawal at al., 1992; Bruner, 2002; Braderson der EL, 2014). Valuation is one of the most complex topics in financial theory. Accurate and realistic corporate valuation in M&A has a major impact on the success of negotiations (Rhodes et al., 2004). Many studies have shown that M&As will fail if they pay a higher amount than the real value of the target company or because of an error in the fair and accurate corporate valuation. Naturally, this impedes the expected synergy after M&A. Synergy is the surplus value created by merging two firms, and the opportunities that did not exist before the firms operated independently (Devos at al., 2012; Shleifer & Vishny, 2003; Damodaran, A., 2005).

Rapport (1979) and Terry (1982) emphasized the importance of acquisition valuation and pricing, which is intended to provide a reason that if the price paid to acquire a company exceeds its value, the acquirer will lose in the long run, even if it has synergistic benefits. In contrast, Smith (1997) found that there is little correlation between price benefits and whether the transaction creates value. Similarly, Koezowit (1985) found no correlation between paid price and performance.

The Fintech term dates back to the early 1990s once the "Financial Services Technology Consortium", was performed as a project by Citigroup. Although,

only since 2014, Fintech was considered in various parts of the financial sector(Arner,2016).

Due to the startup features like expected growth, survival rate, volatility and so forth, the valuation issues of Fintech companies have adapted especially for young companies, and they must consider first the underlying business model (Moro Visconti,2020). Fintech companies are two types of competitive and collaborative[3]. Competitive companies are mature firms, not necessarily specializing in Fintech, looking to squeeze out new competitors applying lower prices and Collaborative companies are those who offer services to enhance the position of competitors (Accenture, 2016). Demyanova (2018) remarks several methodologies that, are barely enforceable to Fintechs. The liquidation value or book value method are shinig example that are not consistent with the nature of startups and their potential value from intangible assets.

Table 1: valuation of mergers and acquisition studies

Item	Author	subject	year
1	Madura, J., Vasconcellos, G. M., & Kish, R. J.	A valuation model for international acquisitions	1991
2	Becher, D. A.	The valuation effects of bank mergers	2000
3	Wilcox, H. D., Chang, K. C., & Grover, V	Valuation of mergers and acquisitions in the telecommunications industry	2001
4	Bharadwaj, A., & Shivdasani, A.	Valuation effects of bank financing in acquisitions	2003
5	Chari, A., Ouimet, P., & Tesar, L. L.	Cross border mergers and acquisitions in emerging markets: The stock market valuation of corporate control	2004
6	D'Arcy, É., Kirchhoff, M., Schiereck, D., & Mentz, M.	Market valuation of real estate finance mergers	2006
7	Bouwman, C. H., Fuller, K., & Nain, A. S.	Market valuation and acquisition quality: Empirical evidence	2009
8	Brotherson, W. Todd & Eades	Company Valuation in Mergers and Acquisitions: How Is Discounted Cash Flow Applied by Leading Practitioners?	2014
9	Eickhoff, M.; Muntermann, J.; and Weinrich, T.,	What do Fintechs actually do?	2017
10	Loukianova, A., Nikulin, E., & Vedernikov, A.	Valuing synergies in strategic mergers and acquisitions using the real options app roach	2017
11	Capital, M.	How to Value an Early-Stage Fintech Company?	2018
12	Chen M.A., Wu Q., Yang B.,	How Valuable is Fintech Innovation?,	2019
13	Fatás A. (ed.),	The Economics of Fintech and Digital Currencies	2019
14	Even-Tov, O., & Ryans, J.	Representations and Warranties Insurance and Valuation Uncertainty in Mergers and Acquisition	2019
15	Farinós, J. E., Herrero, B., & Latorre, M. A.	Market valuation and acquiring firm performance in the short and long term	2020
16	Visconti, R. M.	Goodwill Valuation. In The Valuation of Digital Intangibles	2020
17	Ames, D., Coyne, J., & Kim, K.	The impact of life cycle stage on firm acquisitions	2020
18	Moro Visconti R.,	The Valuation of Digital Intangibles. Technology, Marketing	2020
19	Moro-Visconti, R.; Cruz Rambaud, S.; López Pascual, J.	Sustainability in Fintechs: An Explanation through Business Model Scalability and Market Valuation	2020
20	Jafarizadeh, B.	Uncertain Commodity Prices and Informed Sensitivity Analyses	2021
21	Peltola, S.	The impact of Fintech M&A announcements on acquirers' and their peers' stock returns.	2021

4. Mergers & Acquisitions (M&A) Valuation Methods

Since valuation is an important issue, several approaches are introduced, including asset-based, market-based, and earning-based valuation approaches. This paper introduces and explains the valuation methods based on corporate strategies and market sectors.

4.1. Based on Strategies

4.1.1. Choice and Growth Strategies

Using Ansoff's Model, the valuation of the target company varies depending on the purpose of the acquirer and its position in each of the following: market penetration, product extension, market extension, diversification. The selection of the acquirer depends on the value creation potential when adapting its strengths to market demands (Stahl & Zimmerer, ,1984).

Boston Consulting Group (BCG) matrix classifies business portfolios based on two dimensions: market growth rate and relative market share. The valuation of the target company depends on which cell it is located in (Pautler,2003).. Each of the BCG matrix cells may be in a different stage of the product life cycle. Methods such as the Substantial value, Liquidation value, Book value, and Adjusted book value which are in equity methods selection are not suitable for Early-Stage Fintech Company due to the fact that their financing period has not yet terminated (Capital, 2018).

Hence, the two models complement each other. Growing stars and companies consume a great deal of liquidity and usually lead the market. However, this does not mean that positive cash flow is flowing from this unit to the company because the company has to spend a lot of operating costs to compete with its competitors and therefore it is very difficult to evaluate them. As regards Fintechs will have pathed through high future growth rate, methods that do not contain expectations about the future will not be suitable (Truijens ,2018). Therefore, the income approach due to its forward-looking approach can be a convenient valuation method for Fintechs(Roberti, 2019).

If they succeed, these units will become milking cows, or mature, profitable companies. Dogs, or declining companies, are less profitable or unprofitable as a result of slow market growth and low market share. The acquirer has to spend a great deal of time and money changing these units, which affects its evaluation and valuation. Question marks, as a result of rapid market growth and low market share, are often young units that have to invest heavily to increase their market share over competitors, which is a costly task (McCabe & Narayanan, 1991). Since liquidation value and Book value methods indicate more objective and reassuring values and can also be surveyed into the balance sheet are the most effective methods to valuation of mature companies (Roberti, 2019).

Neither the BCG model nor the Ansoff model can determine the full complexity of the factors determining the competitive environment of markets or the factors that constitute the firm's competitive advantages.

4.1.2. Buy-Hold-Sell Strategy

This strategy can be implemented using the General Electric (GE) matrix, MABA analysis, and SWOT analysis.

The matrix and analyses above allow us to determine in advance whether a market is attractive enough to enter. The answers to these questions that make up the second input of the valuation process, i.e., forecasting future performance, are very important (Sood, A,2010).

As we mentioned in choice and growth Strategies part that contain life cycle, declining firms are different from non-declining firms along various dimensions (Dickinson, 2011), and these differences for instance low sales growth can affect their acquisition process so has on their valuation.

Since market expects a high create synergies in acquiring decline firms, it leads estimate abnormal returns and; consequently, cause calculate a high valuation on an acquisition one. Ames, Coyne & Kim (2020) have shown a formula for calculate BHARs

(buy-and-hold abnormal return) for each acquirer in each period:

$$BHAR_i = \prod_{t=s}^{e}\left(1 + R_{i,t}\right) - \prod_{t=s}^{e}\left(1 + R_{m,t}\right) = BHR_{firm} - BHR_m \quad \textbf{[1]}$$

$R_{i,t}$ = returns over the period (s=start, e= end), where s = day –2 and e = +2 relative to the announcement period returns, s =+3 and e = the acquisition effective date for interim period, s = first month after the acquisition effective date and e = end of month +24 for post-acquisition returns, $R_{m,t}$ = returns for best matching firm over the same period.

4.1.3. Survival and Value Creation Strategies

Applying Porter's Five Forces and RBV models can help implement corporate survival strategies. The intrinsic value of stocks is calculated and analyzed using Porter's Five Forces model based on Michael Porter's theory in accordance with the assumption in valuation (Yaufi, M., & Fachrudin, K. A, 2019). Value creation in business goes beyond the value chain configuration (Porter, 1985).

Since DCF reflects long-term value creation, and it is capable to capture Fintechs high-growth business, can be seen as the most convenient valuation method for Fintechs(Roberti, 2019).

New value creation demonstrates the enhancement of value that can be added to the invested operating capital (IC). Economic Value Added(EVA) is determined by the below composition:

$$EVA=(ROIC^1-WACC)*IC \quad \textbf{[2]}$$

Since ROIC is measured by NOPAT, the formula for the calculation of EVA is:

$$EVA=NOPAT^2-(WACC*IC) \quad \textbf{[3]}$$

4.2 Based on Sectors

4.2.1. Financial Service Firms

Digitalization and technological growth play pivotal roles in the financial services sector, and the continuous trend of high investment volumes and increased eminence of Fintechs evoke a profound penetration of the impacts Fintech M&A activities have on the financial services sector at large. (Peltola, 2021).

After the big crisis of 2008, market stress tests have become routinely for financial service firms especially banks, and based on statistic the effect of market crises on Fintechs are quite different from other industries. Since the business model sensitivity impacts on the valuation the sensitivity of a Fintech market can be measured by the beta (Moro Visconti,2020):

$$\boldsymbol{\beta\ FinTech} = \frac{Cov(FinTech,Market)}{Variance\ Market} \quad \textbf{[4]}$$

Such companies provide little information about the quality of their assets; as a consequence, the information asymmetry that increases the valuation risk in these companies is greater. In addition, it is very difficult to estimate the cash flow in such companies. Using the Income approach in service or trading niches where profit and cash generation can be quite close is limited (Truijens, 2018). A dividend discount model (DDM) can be used if their cash flow is paid as a profit (Damodaran, 2003). In M&A operations, firm value is mostly deliberated to prevision by the Free Cash Flow .The residual Equity Value is then derived subtracting the Net Financial Position(Moro Visconti,2020).

Free Cash Flow to Equity (FCFE) = Net Income - Reinvestment in Regulatory Capital (Book Equity) **[5]**

Considering the stock image model in the behavioral asset pricing model (BAPM) developed by Peter Greenwich 2007 has been suggested to investors and financial analysts. Due to the fact that according to this

model, real stock prices are within a range of prices (Askarzadeh et al,2017).

The use of book value in financial services companies and banks makes sense from a valuation perspective as it reflects regulatory capital ratios. The book value of assets and shares are insignificant when evaluating non-financial service companies.

4.2.2. Commodity and Cyclical Firms

Commodity broker industry acquirers were the second largest group of Fintech acquirers (Peltola, 2021). Harasheh (2021) claimed that commodity valuation due to having specific circumstances is absorbing from a financial valuation viewpoint, and he has been covered the traditional Discounted Cash Flow (DCF) approach and the option models.

Jafarizadeh,(2021) believes that price forecasts are essential to commodity asset valuations and the components of valuation—such as price forecasts and discounting method—should also fit together; consequently, he has recommended examining changes in value by changing the parameters of the valuation. Jafarizadeh,(2021)based on Schwartz and Smith (2000) two-factor price model that assumes the price St at time t has a short- and long-term component, log $St = \chi t + \xi t$ use the optimization procedure below[3]:

$$\min_{\xi 0} \left(\sum_{t=0}^{T} s_t^{*-rt} - X \right)^2 \quad [6]$$

s.t.

$$p\left(\sum_{t=0}^{T} s_t^{*-rt} < X \right) \leq p/100$$

$$p\left(\sum_{t=0}^{T} s_t^{*-rt} \leq X \right) \geq p/100$$

The valuation of such companies is influenced by the acquirer's views on the economics or price of goods; consequently, it is better to use market ratios (Damodaran, 2005).

The P/S coefficient has been used in the past to value public non-stock corporations such as investment management companies. In recent decades, it has also been widely used to value public joined stock companies (public corporations) (Raei and Bakhshiani, 2008).

This method is suitable for evaluating mature cyclical companies with a near-zero profit. If the P/S coefficient is multiplied by the value of each share and is approximately equal to the intrinsic value of the company, it can be said that the company stocks are priced fairly. This ratio can also be used where the P/E ratio is negative.

4.2.3. Firms with Intangible Assets

In recent decades, intangible assets or intellectual capital has become the most important source of wealth and economic progress, even more than tangible assets (Rahnamay Roodposhti,2017). Utilization of DCF methodology for ascribing a value of intangible assets has been recommended by FAS 141 and 142 of the United States and IAS 39 that relate to the accounting. In financial valuation and forms the foundation of contemporary valuation theory, DCF is ubiquitous (Singh, 2013). Intangible assets usually have a remarkable role in the foundation of EVA and MVA(Moro Visconti,2020).

Balance sheet-based valuation techniques such as book value, replacement-cost value, and liquidation value cannot be considered as good criteria for valuing such companies because they ignore intangible assets such as trademarks (brands), patents, technical knowledge, and management skills (Gabehart, S. 1998; Damodaran, A. 2005).

Adjusted book value is calculated by identifying the market value of the assets in the balance sheet and adding the value of the intangible assets not included in the balance sheet, which partly eliminates the weakness of the book value method.

In M&A generalities, the value of goodwill is created if the price paid to buy the target company exceeds the total value of the company's assets. While the acquirer pays more than the acquired value, analysts generally do not consider the value of goodwill arising from the acquisition operation when

calculating the book value (Raei and Bakhshiani, 2008).

5. Conclusion

Evaluation methodologies not only to ease the M&A activity but also to develop value diagnosis for all the stakeholders that are involved in this field. This paper attempted to examine the appropriate valuation methods in M&A using corporate strategies that identify them as the first principle in the valuation process as well as by market sectors. None of the valuation principles should be abandoned in the valuation process. For example, it may be argued that discounted (and intrinsic) cash flow (DCF) does not work for such companies, then alternative criteria and models should be used to calculate the value of these companies. In other words, based on the nature of technological financial services in terms of expected growth, survival rate, volatility, etc we must consider not only the business segment but also the business situation analysis based on strategies.

The structure of valuation methods is strong enough to calculate the value of any company. Nevertheless, this requires flexibility in using approaches and models as well as creativity in estimating and dealing with uncertainty. As a result, a valuation method may not be appropriate for all M&As.

In valuing the M&A process, the most important issue is the acquisition of synergy. Therefore, it is advisable to consider different scenarios, such as pessimistic, optimistic, and probabilistic ones, to obtain the best estimate as well as to consider the political and economic conditions of the country and the world. Attentive to all aforementioned points we should consider the multiples valuation methodology in Fintech market practice.

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Notes

[1] Return On Invested Capital
[2] NOPAT is a very accurate measure of operating efficiency for leveraged companies.
[3] Here, $t \in \{0, \Delta t, 2\Delta t, \dots, (n-1)\Delta t, T\}$ for n time steps. In addition, X is an internal variable we defined to calculate the percentiles.