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The Impact of M&A on TMT Financial Risk:
Dell-EMC and Microsoft-LinkedIn
Comparative Case

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ABSTRACT:

This bachelor thesis aims to comprehensively understand the impact of different forms of financing an M&A acquisition on the financial risk of firms in the technology, media, and telecommunications (TMT) sector. Specifically, it emphasizes the sector-specific nature and the role of the EMC acquisition by Dell and the LinkedIn acquisition by Microsoft.

The thesis provides a definition of financial risk and compares this concept in the TMT companies before and after the transactions, in terms of financial structure, financial ratios, and impact on equity. The use of debt financing for M&A is investigated to determine how it can increase leverage, interest expense, and potential bankruptcy risk, which in turn can affect the firm's risk profile, particularly in the context of the TMT industry. The analysis shows that the use of debt financing for the EMC acquisition resulted in a higher debt burden for the surviving company, leading to a significant increase in its financial risk profile. Conversely, the use of debt financing for the LinkedIn acquisition had a more moderate impact on the financial risk profile of the surviving company.

The study utilizes various financial measures, such as debt-to-capital ratio, debt-to-equity ratio, return on equity (ROE), return on assets (ROA), interest coverage ratio, and quick ratio, to provide a comprehensive understanding of the implications. Financial information from the companies involved in the acquisitions, the TMT sector, and other pertinent sources are included in the research.

This thesis will be a valuable resource for professionals and researchers interested in corporate finance, mergers and acquisitions, and risk management in the TMT sector.

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1. INTRODUCTION:

1.1. Background and Context

The technology, media, and telecommunications (TMT) sector is a dynamic and rapidly evolving industry that plays a crucial role in shaping the global economy. Companies operating in this sector face unique challenges and opportunities driven by constant technological advancements, changing consumer preferences, and evolving regulatory frameworks. In such a competitive landscape, mergers and acquisitions (M&A) have become a prominent strategic tool for TMT companies to achieve growth, gain market share, and enhance their competitive position.

Understanding the impact of M&A on financial risk is of paramount importance in the TMT sector. Financial risk refers to the potential for adverse financial outcomes that may arise from a company's operating and financial activities. In the context of M&A, financial risk encompasses various aspects such as increased leverage, interest expense, potential bankruptcy risk, and overall risk profile of the surviving entity. Given the high levels of investment and capital-intensive nature of the TMT industry, effective management of financial risk is critical for long-term success and sustainability.

The TMT sector faces specific risks and trends that necessitate a deeper examination of the impact of M&A on financial risk. Rapid technological advancements, shorter product life cycles, and intense competition create an environment where companies must continually innovate and adapt to remain competitive. Moreover, the sector is susceptible to market fluctuations, regulatory changes, and disruptive business models that can significantly impact financial performance.

Financial risk plays a vital role in determining the sector's overall performance. High levels of debt and interest expenses can hamper a company's ability to invest in research and development, limit its operational flexibility, and reduce profitability. Conversely, a prudent approach to financial risk management can enhance a company's ability to seize growth opportunities, withstand economic downturns, and maintain a solid financial foundation.

Given the sector-specific nature of the TMT industry and the prevalence of M&A activities, it is crucial to examine how different forms of financing M&A transactions affect the financial risk profiles of companies involved. This examination will provide valuable insights into the implications of M&A on the TMT sector's financial dynamics and shed light on the strategies and approaches that lead to successful outcomes.

In the following sections of this thesis, I will explore the concept of financial risk in the TMT sector, analyze the role of financial ratios in assessing risk, delve into the different types of M&A financing, and evaluate the impact of financing choices on financial risk profiles. By focusing on two notable M&A deals – the EMC acquisition by Dell and the LinkedIn acquisition by Microsoft – I aim to provide a comprehensive understanding of the impact of these transactions on financial risk and performance.

1.2. Research Objective

The primary objective of this thesis is to comprehensively understand the impact of different forms of financing M&A acquisitions on the financial risk of firms operating in the technology, media, and telecommunications (TMT) sector. By focusing on the specific cases of the EMC acquisition by Dell and the LinkedIn acquisition by Microsoft, I aim to gain insights into the sector-specific nature of financial risk and its implications for the surviving companies.

This research seeks to address the following key questions:

1. How does the choice of financing methods for M&A transactions affect the financial risk profile of TMT companies?
2. What are the specific financial ratios that can be utilized to assess the impact of M&A on financial risk?
3. How can be established the impact of the M&A acquisition on a company's financial risk?
4. How do the EMC acquisition by Dell and the LinkedIn acquisition by Microsoft exemplify different approaches to M&A financing and their subsequent effects on financial risk?

Specifically, I will analyze the financial structure and financial ratios of Dell and Microsoft before and after the EMC and LinkedIn acquisitions. The chosen cases offer valuable insights into contrasting approaches to M&A financing within the TMT sector.

Through a thorough analysis of financial measures such as the debt-to-capital ratio, debt-to-equity ratio, return on equity (ROE), return on assets (ROA), interest coverage ratio, and quick ratio, I aim to shed light on the implications of financing choices on the financial risk profiles of TMT companies.

Ultimately, this thesis aims to enhance my understanding of the factors that influence financial risk in the TMT sector and provide practical implications for managing financial risk in the context of M&A transactions.

1.3. Structure of the Thesis

This thesis is structured in a logical and systematic manner to ensure a coherent flow of research and to facilitate the understanding of the topics covered. The following overview provides a brief summary of the content covered in each section, highlighting the progression of the research.

The introduction section provides an overview of the thesis, presenting the research objective, the significance of the study, and the structure of the thesis. It sets the stage for the subsequent sections and establishes the context for the analysis of the impact of M&A on financial risk in the TMT sector.

The “Financial Risk and M&A Activity” chapter delves into the concepts of financial risk and M&A, providing a definition of financial risk and highlighting the role of financial ratios in assessing risk. It explores the determinants of financial risk and establishes the relationship between a firm's financial decisions and its risk profile. The section also discusses different types of M&A financing and the impact of funding choices on financial risk. Every funding aspect that will emerge in the comparative case is analyzed and explained here.

The third section, namely The EMC Acquisition by Dell and the LinkedIn Acquisition by Microsoft, focuses on the two specific cases of the EMC acquisition by Dell and the LinkedIn acquisition by Microsoft. It provides an overview of the TMT sector, highlighting its specific risks and trends, leading to a discussion of M&A activities within the sector. The section then presents the background and complexities of each deal, explores how the deals were financed, and assesses the associated financial risks.

In “A Comparative Analysis of Financial Performance: Dell-EMC vs. Microsoft-LinkedIn Deals” a comparative analysis of the financial performance of the Dell-EMC and Microsoft-LinkedIn deals is conducted. It begins by explaining the rationale for selecting these deals and outlines the methodology and assumptions used in the analysis. The section then presents the results of the analysis, focusing on differences in financing choices, the impact on profitability (revenues, net income, ROE, ROA), leverage (debt-to-capital, debt-to-equity, interest coverage), liquidity (current ratio), and overall financial risk.

The conclusion section summarizes the key findings of the thesis and their implications. It revisits the research objective and highlights the contributions made to the fields of corporate finance, M&A, and risk management in the TMT sector.

The appendix section includes the original Excel analysis conducted for the comparative analysis of the financial performance of the Dell-EMC and Microsoft-LinkedIn deals. It provides transparency and allows interested readers to delve into the details of the analysis.

Lastly, the literature and sites bibliography list the references used throughout the thesis, providing readers with the opportunity to explore the sources and further enhance their understanding of the research topic.

By following this structure, readers will gain a holistic understanding of the subject matter and the specific cases analyzed, ultimately leading to valuable insights and conclusions.

2. FINANCIAL RISK AND M&A ACTIVITY

2.1. Definition of financial risk

Risk is exposure to a proposition of which one is uncertain (What is financial risk: types and tips for dealing with it, n.d.)¹. When conducting business, choices must frequently be taken where the results cannot be predicted with certainty owing to insufficient knowledge (Stroeder, 2008). Risks stem from the uncertainty associated with all business activities.

Business risk is the risk of a firm if it uses no debt, inherent in a firm's operations; financial risk is the additional risk placed on the common stockholders as a result of the firm's decision to use debt (financial leverage), because debtholders, who receive fixed interest payments, bear none of the business risk (Brigham, 1977).²

According to Juma (2018), financial risk involves financial loss to firms. Financial risk can be seen as the possibility of losing money on an investment or business venture due to various factors such as market volatility, economic downturns, unexpected events, and poor financial management. It is the risk associated with a company's financial structure, including its level of debt, cash flow, and profitability. A firm with high financial risk is said to have high leverage or high gearing. In other words, leverage and gearing are measures of financial risk. Generally, higher financial risk should lead to higher equity returns for a given business risk and the major reason why companies take on debt is to enhance their returns to shareholders.

¹ What is financial risk: types and tips for dealing with it. (n.d.). Becas-santander.com, from <https://www.becas-santander.com/en/blog/what-is-financial-risk.html>

² Brigham, E. (1977). Financial management: theory & practice. The Dryden press.

Eichhorn (2004) and Napp (2011) both claim that there are two types of financial risk. Objective financial risk is influenced by changes in financial markets, including interest rates, market rates, and commodity prices. Financial risk may also result from irrational circumstances, in which case the state of one's finances serves as the risk's source. Financial risk has an impact on an organization's business value in addition to performance, cash flow balance, and solvency.

Svetlova and Thielmann (2020) point out that financial risk is classified into some distinct categories including credit risk and liquidity risks. Bender and Panz (2021)³ categorized financial risks into six categories. Market risk is related to changes in the business environment and how it affects business operations. Model risk is associated with the consequences of using incorrect models in risk measurement, pricing, or portfolio selection. Credit risk arises when a company extends credit to a client who fails to pay, which can disrupt cash flow and reduce profit. Liquidity risk refers to the company's inability to quickly convert assets to cash in case of a sudden need for cash, as well as its inability to meet its financial obligations. Operational risk is the risk that operational failures, such as mismanagement, fraud, business model failure, or technical issues, will affect the business's performance. Finally, valuation risk is the risk that an entity may suffer a loss when trading an asset or a liability due to a difference between the accounting value and the price obtained in the trade.

Financial risk does not have an inherent positive or negative quality, and its advantages and disadvantages depend on the circumstances. On the one hand, financial risk can lead to growth and expansion of a company by generating more revenue. It can also be used for tax planning purposes by obtaining a tax deduction from losses over several years. Additionally, financial risk can serve as a warning for investors and managers to take action and help assess income using the risk-return ratio. On the other hand, financial risk also has several disadvantages. For instance, there is the likelihood of catastrophic outcomes, such as a company going bankrupt due to a failure to make payments. Financial risk cannot always be controlled as it may arise from global factors, natural disasters, wars, etc. A company with a high level of financial risk may struggle to meet its financial obligations, such as paying off debts or paying dividends to shareholders, which can result in a decrease in the value of its stocks or even bankruptcy. Furthermore, if not managed appropriately with the right strategies, financial risk can have long-term effects that damage a company's finances and reputation, as well as impacting the entire sector, market, and economy.

There are multiple ways to measure financial risk, other than Big Data technologies and machine learning, consisting of evaluating the following aspects: debt-to-capital ratio; debt-to-equity ratio; interest coverage; cash flow and debt; equity multiplier (financial leverage multiplier).

³ Bender, M., & Panz, S. (2021). A general framework for the identification and categorization of risks: an application to the context of financial markets. *Journal of Risk*.

2.2. The role of financial ratios to assess financial risk

Financial ratios may be used to evaluate a company's capital structure and risk levels, particularly in terms of its debt level and the likelihood of default or bankruptcy. Investors use these ratios to make investment decisions, as a company's ability to manage its debt is crucial to its financial stability and operational ability. Debt levels and management also have a significant impact on a company's profitability, as servicing debt requires funds that cannot be invested in growth and reduces the net profit margin. The use of debt increases a firm's expected ROE.

Ratios can be most effectively used when comparing companies in the same industry and over time (Spinney, n.d.). For any one firm, more than one measure might be required to properly understand the financial risk. Credit rating agencies utilize the techniques mentioned above extensively, but they also consider company risk research to be crucial. Debt-to-capital, debt-to-equity (D/E), interest coverage, and the quick ratio are some commonly used ratios to assess a company's financial risk level and overall financial health (Hayes, 2015)⁴.

Debt-to-Capital Ratio: $\text{Debt} / \text{Capital} = \text{Debt} / (\text{Debt} + \text{Shareholders' Equity})$

It provides a basic overview of a company's financial structure in terms of how it is funding its activities. It is a measure of leverage. It serves as an indicator of a company's financial position. The ratio measures the proportion of the assets that are financed by debt by comparing the company's total short-term and long-term debt obligations with the total capital it has received through both shareholders' stock and debt financing.

Lower debt-to-capital ratios are preferred as they indicate a higher proportion of equity financing to debt financing.

Debt-to-Equity Ratio: $\text{Debt} / \text{Equity} = \text{Debt} / \text{Shareholders' Equity}$

It more directly compares debt financing to equity financing, highlighting the ability of a business to pay off its outstanding debt obligations.

A lower ratio number is preferred since it shows that the company is funding operations with cash on hand rather than by incurring debt. Stronger equity positions often give businesses the ability to withstand short-term revenue fluctuations or unexpected demands for further capital expenditure. Increased D/E ratios might harm a company's capacity to get more funding down the road and future funding may be more difficult for a corporation with a larger debt-to-equity (D/E) ratio.

⁴ Hayes, A. (2015, June 22). What financial ratios are used to measure risk? Investopedia. <https://www.investopedia.com/ask/answers/062215/what-are-financial-risk-ratios-and-how-are-they-used-measure-risk.asp>

Interest Coverage Ratio: EBIT / Interest Expense

It is a fundamental indicator of a company's capacity to manage its short-term borrowing expenses. The ratio value shows the number of times a company's current earnings before interest and taxes (EBIT) can cover the needed yearly interest payments on its existing debt. A relatively smaller coverage ratio denotes a heavier load on the business in terms of debt servicing and, thus, a larger risk of default or financial collapse. A lower ratio number indicates that there will be less money available to pay for financing, and it also indicates that the firm will be less prepared to withstand an increase in interest rates. Investors believe that a business that has an interest coverage ratio of 1.5 or less is more likely to have possible debt service-related financial issues. A ratio that is too high, however, can mean that the business is not utilizing the financial leverage that is available to it.

Quick ratio: Total Current Assets / Total Current Liabilities

It is a measure of liquidity that assesses a company's ability to meet its short-term obligations using its most liquid assets. By examining the financial risk implications of the data, we can determine whether the acquisition will strain the company's cash reserves or result in a significant increase in debt levels. The greater a firm's liquidity and financial health, the higher the ratio result; the lower the ratio, the more probable it is that the company would have trouble paying its obligations.

2.3. Financial risk determinants

In 1984, researcher Alexander Bathory created a model with scales for five sets of financial indicators, including capital structure, profitability, and capital percentage, to assess the financial risk of enterprises. Analyzing the financial risk faced by large businesses, Cao and Zen (2005) find that financial risk has no relationship with interest rates and solvency but is positively connected with debt size and structure, negatively correlated with performance, and unrelated to profitability.

Based on the theoretical and empirical research on financial risk, 5 research hypotheses has been set up on the factors affecting the financial risk of enterprises (Dang et al., 2020)⁵:

1. Debt structure of industry listed firms is positively correlated with financial risk.

The ratio of short-term debt to total liabilities is shown by the company's debt structure. The danger of financial risk increases if the firm employs an excessive amount of short-term debt, which will put pressure on the business to pay its due debts.

2. The solvency of listed enterprises is negatively correlated with financial risk.

⁵ Dang, H. T., Faculty of Transport Economics, University of Transport Technology, Vietnam, Phan, D. T., Nguyen, H. T., & Hoang, L. H. T. (2020). Factors affecting financial risk: Evidence from listed enterprises in Vietnam. *Journal of Asian Finance Economics and Business*, 7(9), 11–18. <https://doi.org/10.13106/jafeb.2020.vol7.no9.011>

Solvency means the capacity to pay its due debts at any time. Good financial situation, high solvency will meet due debts and low financial risk. Financial risk is inversely correlated with solvency in Bathory's approach.

3. Profitability of listed enterprises is negatively correlated with financial risk.

The capacity to make a profit off a unit of cost, input, or output that represents the performance of a firm is known as profitability. The profitability of businesses grows when industrial firms' business operations are successful and conducive to boosting profits. Businesses can enhance accumulated earnings, strengthen solvency, pay off past-due obligations, and lower financial risk.

4. Operation efficiency of enterprises is negatively correlated with financial risk.

Operational efficiency refers to an enterprise's capacity to provide operational outcomes while utilizing inputs. The development of an enterprise's business operations is indicated by an increase in turnover or payment speed, and vice versa.

5. The capital structure of firms is negatively correlated with financial risk.

The capital structure shows how much of each type of capital makes up the total amount of capital. The firm's capacity to repay debts is readily assured, creditors are safer, and the financial risk of the company decreases when the high self-financing ratio is similar to the ratio of debt to total capital resources.

2.4. Definition of M&A

Business transactions known as mergers and acquisitions (M&A) occur when the ownership of one company or business organization is transferred to, or combined with, another firm or business organization. The strategic rationale makes use of the merger or acquisition in achieving a set of strategic objectives.

M&A may help businesses grow or downsize, change the nature of their operations, or improve their competitive position as a part of strategic management. The main difference between a merger and an acquisition lies in the way in which the combination of the two companies is brought about.

By definition, an acquisition is the purchase of one business or company by another company or other business. In a simple acquisition, the acquiring company obtains the majority stake in the acquired firm, which keeps its name and organizational structure unaltered. Numerous methods, such as market research, trade expos, requests from internal business units, or supply chain analysis, can be used to pinpoint specific acquisition targets. Such purchase may be of 100%, or nearly 100% of the assets or ownership equity of the acquired entity.

On the other hand, a merger is the coming together of two businesses that are approximately the same in size in order to move forward as a single new entity, rather than remain separately owned and operated (Hayes,

2005)⁶. This process is referred to as a merger of equals. The boards of directors of the merging firms accept the union and request shareholder approval.

In Western nations, mergers and acquisitions (M&A) have a lengthy history, with a growing number of deals occurring throughout the previous century (Yan & Li, 2009).⁷ Strong economic growth across the majority of the globe, the acceleration of globalization, changes in the international economic and regulatory environments, and the maturation of several emerging markets are all factors putting more pressure on businesses to compete. Many businesses have realized that in order to stay competitive in the face of these pressures from the market, they must expand internationally (Useem, 2006; Hitt, 2000; Hitt et al., 1998a, b). In 2014, the seventh wave of global M&A began, and it is currently ongoing (Caiazza & Volpe, 2015)⁸.

It is customary to start the M&A transaction process with an information memorandum whenever a buyer has not yet been identified. The vendor often creates and publishes the information memorandum with the intention of gauging market interest and ultimately selling the firm, group of companies, or their business, or a portion thereof, for the highest possible price. An information memorandum typically contains enough information to give the potential buyer enough detail to decide whether it wants to pursue the acquisition of the target company or business. If a buyer is interested in buying the target company or its business, they will typically enter into a Non-Disclosure Agreement (NDA), which is designed to protect the target company's confidentiality and the sensitive information pertaining to its business.

This second step is typically preceded by the due diligence procedure whenever there are multiple prospective buyers engaged. If there is only one interested party, it is typical for the parties to begin discussing some issues that should come up before the contractual phase of the sale, either prior to or concurrently with the start of the due diligence process. Such matters include licensing matters, fiscal and law implications.

Due diligence must be based on various levels of investigation to identify foreign market risks and opportunities, industry trends, and the effectiveness of the target's competitive position. The present setting requires a multilevel due diligence process that, when considering the field of foreign policy, combines cultural and human resource analysis with legal and financial concerns for an unbiased examination of the target (Howell, 1970; Lindgren, 1982a; De Noble et al., 1988; Dionne, 1988; Schweiger et al., 1994). In fact, multilevel due diligence must take into account concerns with labor, local regulations, culture, and human resources management in addition to financial aspects, taxes, and asset assessment.

⁶ Hayes, A. (2005, June 20). Mergers and Acquisitions (M&A): Types, Structures, Valuations. Investopedia.

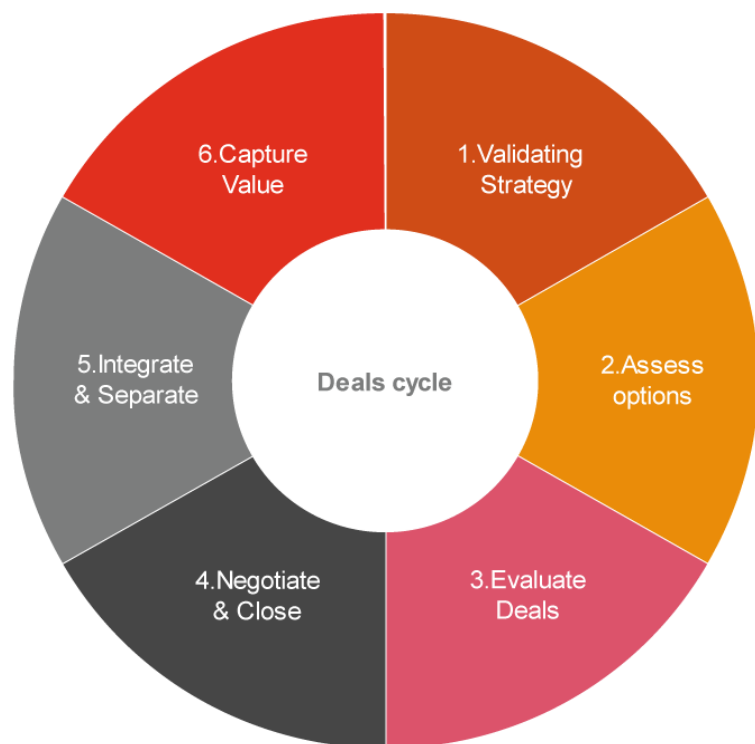
<https://www.investopedia.com/terms/m/mergersandacquisitions.as>

⁷ Yan, Y., & Li, K. (2009). The study of financial risk in M&A. *International Journal of Business and Management*, 4(1).

<https://doi.org/10.5539/ijbm.v4n1p70>

⁸ Caiazza, R., & Volpe, T. (2015). M&A process: a literature review and research agenda. *Business Process Management Journal*

The company must either negotiate the merger transaction or launch a takeover bid, and all terms and conditions thereto. Depending on whether the transaction involves the purchase of shares or a business, this may also entail negotiating the final price or deciding on a method that would determine the sale price as



well as the specifics of the warranties, indemnities, and any limitations that would then be included in a share purchase agreement (SPA) or an assets purchase agreement (APA) (PricewaterhouseCoopers, n.d.)⁹. The goal is to close a deal that will benefit the company's strategic goals and add value (Caiazza, 2013). In addition to implementing post-closing issues, the parties may think about engaging in a post-closing integration exercise to merge the two businesses with the goal of maximizing synergies to ensure the success of the transaction.

PricewaterhouseCoopers. Deals. PwC. From <https://www.pwc.com/th/en/deals.html>

The effectiveness of M&A in achieving strategic goals will depend on the strategy's conceptual and empirical validity as well as the clarity with which managers within the acquiring company understand and are committed to the goals and crucial success factors of the selected strategy (Carbonara and Caiazza, 2009a, c). Success in M&A requires understanding that a deal is not done effectively until the transaction's value has been delivered (Bailey and Thomas, 2009).

2.5. Relationship between a firm's financial decision and its risk profile

It has been demonstrated that financial factors directly influence business investment decisions. The availability of internal funds has a significant impact on the investment decisions of companies with high creditworthiness (as measured by standard financial ratios); less creditworthy companies have a far smaller impact. This validates the findings of Kaplan and Zingales (1997), who discovered that the most sensitive to internal cash flow were the investment outlays of the least restricted enterprises.

⁹ PricewaterhouseCoopers. (n.d.). Mergers & Acquisitions - The 5 stages of an M&A transaction. PwC. From <https://www.pwc.com/mt/en/publications/tax-legal/mergers-and-acquisitions-5-stages-of-MA-transaction.html>

According to Modigliani and Miller (1958), in a world with perfect and comprehensive capital markets, a firm's financial status is irrelevant for actual investment decisions. Financial structure, however, could be important when making investment decisions for businesses with unclear prospects that operate in capital markets that aren't perfect or comprehensive and where the cost of external capital is higher than the cost of internal resources.

By referencing asymmetric information issues in capital markets, Greenwald, Stiglitz, and Weiss (1984), Myers and Majluf (1984), and Myers (1984) offer a framework for these market defects. Alternately, Bernanke and Gertler (1989, 1990) and Gertler (1992) show that agency costs can also result in an increase in the premium on external financing when the borrower's net worth declines. Because internal funds have a cost advantage over external funds in certain contexts, for firms operating in such circumstances their availability affects investment decisions.

Utilizing multiple discriminant analysis, a company's financial standing is assessed based on factors such as dividend distribution, size, age, group membership, or debt ratings.

According to Jensen (1986), businesses boost their investment in reaction to the presence of cash flows. Because growth "increases managers' power by increasing the resources under their control," according to Jensen, "managers have incentives to cause firms to grow beyond optimal size." According to Bernanke and Gertler (1990), "both the quantity of investment spending and its expected return will be sensitive to the creditworthiness of borrowers (as reflected in their net worth positions)" (Acquisitions & Faccio, n.d.).¹⁰

The relationship between a firm's financial decision and its risk profile can differ across different sectors and different institutional environments. This is due to the fact that every country and industry has its own distinct characteristics, including variations in business models, operating expenses, revenue sources, legal and tax systems, and levels of corruption, among other factors.

The degree of competition in every industry can also have an impact on a company's willingness to assume financial risk. Businesses may need to assume greater financial risk in highly competitive industries in order to preserve their competitiveness and market position. On the other side, businesses may be less inclined to take on financial risk in less competitive industries and may be more cautious in their financial decision-making.

An important percentage of the variation in leverage and debt maturity ratios can be explained by a nation's legal and tax structure, level of corruption, and capital sources' preferences (Brunel, 2011). Companies operating in countries with a reputation for being more corrupt tend to use less equity and more debt, particularly short-term debt, whereas companies operating in jurisdictions with legal systems that offer better

¹⁰ Acquisitions, M., & Faccio, R. W. (n.d.). The Choice of Payment Method in European Mergers and.

protection for financial claimants tend to have capital structures with more equity and relatively more long-term debt. In addition, more leverage and more long-term debt are linked to the existence of a clear bankruptcy rule and/or deposit insurance.¹¹

Companies tend to use more debt in nations with higher tax gains from leverage, whereas they tend to use less debt in nations with larger government bond markets, implying that government bonds tend to drown out corporate debt. Higher debt ratios and longer debt maturities are found in countries with larger defined benefit pension funds, while smaller debt ratios are found in countries with larger defined contribution fund activity. In addition, debt ratios are lower in nations where pension funds are not allowed to hold as much debt. Last but not least, there is no connection between financing options and the size of the insurance business (Fan et al., 2010).¹²

In the context of multinational companies, the amount of debt a multinational company has in a country is determined by the weighted average of local tax rates and the distinctions between local and foreign tax rates. These variations are significant because multinational corporations have an incentive to move debt to high-tax nations (Huizinga et al., 2008)¹³.

Therefore, the specifics of the acquisition and the industry it occurs in have a significant impact on how financial risk in various industries is affected by M&A acquisitions. To reduce the negative impact on the firm's financial risk profile, a rigorous assessment of the acquisition's risks and advantages and a strong financing strategy are essential.

2.6. M&A types of financing

Acquisition finance refers to the various funding sources that are utilized to finance a merger or acquisition. Since acquisition finance structures frequently require a lot of variations and combinations, this is typically a complex mission requiring careful planning. Furthermore, it's uncommon to obtain acquisition financing from a single source. Finding the right combination of financing that has the lowest cost of capital is difficult given the variety of options available to finance an acquisition.

The structure of the bid affects the capital structure of the post-merger firm, the ownership structure and corporate control, the financial leverage, the subsequent financing options of the acquirer, the tax treatment of both the acquiring firm and the target's stockholders, the ability of the target firm's stockholder to benefit

¹¹ Brunel, C. (2011). Nber.org, from <https://www.nber.org/digest/mar11/capital-structure-and-debt-maturity-choices>

¹² Fan, J. P. H., Titman, S., & Twite, G. (2010). An international comparison of capital structure and debt maturity choices. National Bureau of Economic Research.

¹³ Huizinga, H., Laeven, L., & Nicodeme, G. (2008). Capital structure and international debt shifting. *Journal of Financial Economics*, 88(1), 80–118. <https://doi.org/10.1016/j.jfineco.2007.05.006>

from future merger-related gain, and the types of federal and state regulations to which the acquiring firm will be subjected.¹⁴

The target firm may receive payment from the acquiring corporation in the form of cash, stock swaps, debt, equity, or a leveraged buyout (Trinidad, 2019)¹⁵.

All-cash acquisition deal:

Shares are typically exchanged for cash in an all-cash acquisition arrangement. The parent company's balance sheet's equity proportion stays the same. In cases where the target company is smaller and has less cash on hand than the acquirer, cash transactions frequently occur.

Cash-paying acquirers must either use their own cash reserves or take out a loan. Large acquisitions can be made by cash-rich corporations like Microsoft, Google, and Apple without borrowing money, but most businesses need outside funding.

Stock swap transaction¹⁶:

A stock swap is the exchange of one equity-based asset for another, giving the buyer the option to pay with shares rather than cash during the merger or acquisition.

The main advantage of stock payment to the buyer is the preservation of cash. By paying using acquirer shares, purchasers who don't have much cash on hand can complete the transaction without having to take out a loan. Moreover, if a portion of the deal is with acquirer stock, the seller can often defer paying tax. On the seller side, a stock agreement gives the seller the opportunity to participate in the company's future growth and may allow him or her to postpone paying taxes on the sale's associated gain.¹⁷

When a firm has publicly traded stock, the buyer and the target company can swap shares. According to a swap ratio, the payment is in proportion to the value of the purchased company.

Acquisition through equity:

Equity financing is a type of financing in which the acquirer issues new shares of stock to raise the funds needed to acquire the target company. This type of financing is typically used when the acquirer does not have enough cash on hand to finance the acquisition, or when the acquirer wants to avoid taking on debt. Equity is the most expensive type of financing in acquisition finance, because it dilutes the ownership of the acquirer's existing shareholders. However, equity financing can be attractive for acquirers that are targeting businesses with unstable free cash flows or unstable industries. This is because equity financing does not require the acquirer to make any recurring payments, such as interest payments on debt.

¹⁴ Brigham, Eugene Foster. (1977). *Financial management: theory & practice*. Hinsdale, (Illinois) The Dryden press.

¹⁵ Trinidad, C. (2019, October 27). Acquisition finance. Corporate Finance Institute.

<https://corporatefinanceinstitute.com/resources/valuation/acquisition-finance-structures/>

¹⁶ US Legal. US Legal Incorporated. Web. July 21st, 2014. <http://defenitions.uslegal.com/s/stock-swap>

¹⁷ Wall Street Prep. https://wsp-blog-images.s3.amazonaws.com/uploads/2020/11/04143748/WSP_MA_Ebook_V2.pdf

Acquisition through debt:

One of the most popular methods of funding acquisitions is debt finance. The majority of businesses are either incapable to pay in cash or their balance sheets forbid it. In addition to being the least expensive way to finance a purchase, because debt financing is considered to be a lower-risk investment for the lender, as the acquirer is legally obligated to repay the loan, debt can take many different forms. The forecast cash flow, profit margins, and liabilities of the target company are typically examined by the bank before approving financing for an acquisition. A prep course is to examine the financial standing of both the target company and the purchasing company. In the case of asset-backed financing, banks might make loans based on the security provided by the target company. Fixed assets, receivables, intellectual property, and inventories are examples of collateral. Tax benefits are another prominent feature of debt financing.

Leveraged buyout:

A special combination of equity and debt is utilized to finance an acquisition in a leveraged buyout. It is among the most widely used purchase financing models. Both the target company's and the purchasing company's assets are regarded as secured collateral in an LBO.

Companies that participate in LBO transactions are often mature, have a solid asset base, consistently produce significant operating cash flows, and require less capital. A leveraged buyout's main goal is to force businesses to generate consistent free cash flows sufficient to pay off the debt used to purchase them.

It's crucial to consider how well the funding fits the objectives and particulars of the company agreement. Planning the acquisition financing structure to meet the situation is crucial. Additionally, the acquisition finance structure needs to be sufficiently flexible to function effectively in different scenarios. It can only be achieved if the organization's ability to generate cash flow and the strength of its asset base are the foundations upon which adaptability and the cost of the acquisition financing structure are built.

For example, large amounts of debt are better suited for mature businesses with consistent cash flows and little need for significant capital investments, because even though debt is relatively more affordable than equity, the interest it requires can limit an organization's flexibility. The most likely candidates for equity financing are companies that compete in volatile markets, aim to expand quickly, and necessitate a significant amount of capital for expansion. It's crucial to keep in mind that acquisition finance arrangements usually combine more than two funding options for sizable acquisitions.

2.7. M&A financing choice

When deciding on the method of payment, there are various factors to consider. The acquiring company should carefully examine other bids before submitting an offer. For the vendor, the method of payment could be important. There is no question about the true worth of the bid in pure cash transactions (without taking a prospective earnout into account). In fact, the share payment's contingency has been eliminated. Consequently, a cash offer preempts rivals better than a security offer. Taxes are the second factor to take into account and should be assessed with the advice of qualified tax and accounting professionals. Third, with a share purchase, the control of the buyer may change and their financial structure may be impacted. Shareholders of the acquiring firm may vote down a capital increase at the annual meeting of shareholders if the issuing of shares is required. A cash transaction eliminates the danger. The buyer's balance sheet will then be altered, and the decision-maker must consider the implications for the financial results that will be publicly published. Liquidity ratios may fall, for instance, in a pure cash transaction (paid from the company's current account). On the other side, the corporation may display worse profitability ratios (such as ROA) in a pure stock for stock transaction (funded via the issue of new shares) because ROA is calculated as net income divided by total assets; if the number of shares outstanding increases, but net income remains the same, then ROA will decrease. When making the decision, however, economic dilution must take precedence over accounting dilution. Financing options and payment methods are closely related. Cash on hand and issuing debt are the two primary financing options if the buyer pays cash.

Bidders have systematic preferences for specific sources of financing, which are dependent on the characteristics of their firm (such as cash flows, debt capacity, corporate governance regulation, and growth opportunities) and the characteristics of the takeover (such as relative target size, bid hostility, public or private status of the target firm, etc.), even after accounting for the method of payment.

The means of payment are a technique used by bidding companies to lower the risks involved in the takeover agreement, such as the danger of the target company being misvalued, the threat of a change in ownership, and the risk of the bid failing.

The bidder's concerns about the cost of capital have an impact on the financing decision. Cash-rich bidders, in particular, choose internally produced funds as the least expensive source of funding, in accordance with the pecking order concept. In order to finance M&As, bidders with insufficient internal capital raise outside cash; they use borrowing when their debt capacity is high (leverage is low and their assets' collateral values are high). When investors are optimistic about the firm's underlying worth (price run-up is high), they decide to issue shares.

The necessity for flexibility in managing corporate money, however, prohibits businesses with significant room for expansion from using debt to finance takeovers, which could lead to a debt overhang issue, and forces them to employ equity capital instead (even though they still have a high debt capacity). Lower external capital costs favor bidders operating in better corporate governance environments: stock financing is more common when shareholder rights are well protected, and debt financing is more prevalent when creditor rights are well protected by law and the courts.

A bidder must decide between utilizing cash or shares as deal compensation in an M&A currency decision because each will have different effects. Cash offers typically require debt financing because the majority of bidders have little cash and liquid assets. As a result, a bidder implicitly must choose between debt and equity financing, which requires balancing the risks of corporate ownership with the mounting costs of financial distress associated with issuing debt. Therefore, a bidder's debt capacity and existing leverage may have a significant impact on the M&A currency decision. The management's determination to keep the current corporate governance structure might also have a big impact. In contrast, a seller might be faced with a tradeoff between the tax advantages of stock and the advantages of cash consideration, such as liquidity and risk reduction. For instance, if the target stock has a low tax basis and the seller can defer their tax obligations by accepting bidder stock as payment, they might be ready to accept stock. On the other hand, sellers may want cash payment to avoid the possibility of ending up as a minority shareholder in a bidder with a disproportionate amount of ownership and the related moral hazard issues.

Moreover, the decision of the merger currency can have a significant impact on the corporate governance structure of a bidder when considering financing options because stock issuance lessens the voting power of a shareholder with a majority stake. The management of the bidder has an incentive to choose cash financing over stock financing if maintaining control is vital to them, especially when that control is challenged. When a target's share ownership is concentrated and a bidder's largest shareholder has an intermediate level of voting power in the range of 20–60%, she is most vulnerable to losing control under a stock-financed acquisition, which is when the corporate control incentives to choose cash are likely to be strongest. These incentives are lessened if a bidder or target is held widely since the controlling block of the bidder is not in danger. On the other hand, equity financing is unlikely to endanger a shareholder's ability to maintain control if she possesses supermajority voting rights. Any hesitation to issue stock in an acquisition is much diminished in this situation.

2.8. Cash/tracking stock deal

A cash/tracking stock deal is a type of acquisition in which the acquiring company offers a combination of cash and a special type of stock known as tracking stock to the shareholders of the target company.

A tracking stock is a unique equity offering made by a parent business that monitors the financial progress of a certain segment or division. Tracking stocks will trade on the open market independently of the stock of the parent firm.

Larger businesses can separate the financial results of a higher growing division by using tracking stocks. In turn, tracking stocks enable investors to obtain exposure to a particular area of a bigger company's operations (for example, the mobile division inside a major telecom provider).

All revenue and costs of the relevant division are kept separate from the parent company's financial statements when a parent company issues tracking shares. The financial results of the division or segment it tracks, not those of the parent business, determine the tracking stock's long-term performance. Even if the main firm is functioning poorly, if the subsidiary performs well financially, the tracking stock will probably rise. On the other hand, even if the parent business is doing well, the tracking stock will probably decrease if the subsidiary experiences a financial slump.

In its heyday, during the dot-com era, tracking stock was frequently promoted as an investment in a high-growth company that was being controlled by a well-established but otherwise slower-growing corporation that believed the market was undervaluing it. The parent firm and its stockholders continue to have operational control over the division, nonetheless. The idea of tracking stock was to give investors more options and transparency while preserving the issuer's control of the tracked assets. Tracking stock must be considered as common stock of the issuing corporation for tax purposes rather than stock of the subsidiary it tracks or another sort of asset, as the tax code offers a number of important advantages to an issuing firm that uses its own common stock.

Tracking stocks are issued by businesses as a means of raising capital. The funds can then be utilized to make debt payments, finance other business expansion plans, or make additional investments in the tracking division (Chen, 2003)¹⁸.

Tracking Stock Pros	Tracking Stock Cons
<ul style="list-style-type: none"> - Gives investors greater choices and transparency. - Investors can access a company's more promising segments by tracking equities. - Tracking stocks solely reflect the performance of the segment being tracked, not the parent firm as a whole. 	<ul style="list-style-type: none"> - Even if the parent business does well, investors in tracking stocks may lose money if the division performs poorly. - Typically, voting rights for tracking stocks are either minimal or nonexistent.

¹⁸ Chen, J. (2003, November 24). Tracking stock: Definition, benefits, risks, and example. Investopedia. <https://www.investopedia.com/terms/t/trackingstocks.asp>

<ul style="list-style-type: none"> - Companies can use the proceeds from new tracking stock issuance to reduce debt and finance expansion. - Stocks treated as common stocks to benefit from tax law. 	<ul style="list-style-type: none"> - Even if the tracking division is profitable, creditors may be able to seize its assets if the parent company declares bankruptcy. - Subject to the credit risk of the issuing corporation as a whole.
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The objective of tracking stock structuring is to create a product that can be sold to the general public as synthetic stock of the tracked company while yet being recognized as common stock of the issuer for tax reasons.

The late Marty Ginsburg created public company tracking stock in 1984 to be used as payment when General Motors bought Electronic Data Systems. An additional tracking stock was issued by GM when it acquired Hughes Aircraft Co. one year later. In each instance, the tracking stock was created to give target company shareholders and workers access to GM shares that would track the target firm's economic performance rather than GM's overall performance.¹⁹

The purpose of a cash/tracking stock agreement is to enable the acquiring company to purchase the target company while preserving some business ownership for the target company's shareholders. While the tracking stock portion of the transaction gives shareholders the opportunity to continue participating in the performance of the business unit linked to the tracking stock, the cash portion of the transaction gives them immediate value.

When the target company has a valuable business unit or asset that the acquiring company is particularly interested in, cash/tracking stock agreements are frequently used. The acquiring company can encourage the target company's management to maintain focus on that unit and drive success by providing tracking stock connected to that business unit, while also enabling shareholders to profit from that performance.

2.9. Debt financing vs equity financing

Ownership is the main distinction between financing an acquisition with debt versus equity (Evans, 2022)²⁰. When a corporation receives equity funding, some of the owners' ownership is given away. Contrarily, under debt financing, a company's owners remain the same, but the corporation accrues debt to investors.

¹⁹ [https://www.friedfrank.com/uploads/siteFiles/Publications/Tracking%20Stock%20Awakens%20\(2\).pdf](https://www.friedfrank.com/uploads/siteFiles/Publications/Tracking%20Stock%20Awakens%20(2).pdf)

²⁰ Evans, S. (2022, September 22). How to fund a business acquisition. Harper James; Harper James Solicitors. <https://harperjames.co.uk/article/how-to-fund-an-acquisition/>

Both debt and equity financing can involve securities, notwithstanding their differences. Securities typically take the form of shares in equity finance, whereas bonds and notes are typical types of securities in debt financing.

Investors that purchase stock in a corporation will be granted the standard shareholder privileges, such as the right to dividends and voting power at shareholder meetings.

In contrast, debt investors are not permitted to participate in shareholder meetings or receive dividends from a corporation. Debt securities are frequently dated and only entitle investors to payments while the debt is still owing. On the other hand, shareholders maintain their right to vote and dividends for the duration that they own shares.

Another key difference between cash and stock transactions is as follows: In cash transactions, the acquiring shareholders assume full risk that the anticipated synergy value built into the acquisition premium won't actually occur. This risk is assumed and shared between selling shareholders in stock transactions. To be more specific, the synergy risk is split between the purchasing and selling shareholders in proportion to their respective ownership stakes in the merged company. So, stock transactions appear to give shareholders of the acquired company the opportunity to benefit from any synergy gains that the acquiring shareholders expect to realize in addition to the premium. Of course, the issue is that the acquired company's stockholders must also bear the risks. Of course, in many takeover situations the acquiring company will be so much bigger than the target that the selling shareholders will wind up controlling a very small piece of the merged business.

	Pros	Cons
Equity financing	<ul style="list-style-type: none"> - Does not require repayment - Does not increase leverage - Is advantageous if a company's share price is high 	<ul style="list-style-type: none"> - Expensive compared to debt - Might result in a loss of control - Synergies will boost net income, but EPS may decline if management has to issue a lot of shares
Debt financing	<ul style="list-style-type: none"> - Less expensive than equity - Does not compromise control - Shareholders gain from all synergies 	<ul style="list-style-type: none"> - Cap on the amount of funding - It drains cash to pay interest and repay the debt - Possible credit rating downgrade

M&A financing. (2021, February 25). Financial Edge. <https://www.fe.training/free-resources/ma/ma-financing/>

2.10. Different types of debt financing M&A

We have seen that it is possible to acquire a firm through a deal that is fully financed with cash. Although the majority of acquisitions do require some type of up-front cash payment, it is remarkably uncommon to finance the entire transaction in this way. The most obvious option to paying for a transaction with stock is using company funds or cash. Although cash is the preferred method of payment, the cost of M&A transactions can reach millions or even billions of dollars, and few businesses have access to this kind of cash through their own resources. In cash transactions, the acquiring shareholders assume full risk that the anticipated synergy value built into the acquisition premium won't actually occur.

The operating cash flows of the combined company must be considered when financing an acquisition. Unlike equity financing, debt financing results in cash outflows (for interest payments and loan repayment). Loans and debt securities are the two main forms of debt acquisition financing.

The amount of capital required is only a single variable that influences the debt financing models. The loan products' suitability for the target business, the estimated credit quality and leverage after completion, the existing or assumed financing of the buyer or target, the refinancing and exit strategies, and the conditions of the credit and capital markets are aspects to be taken into consideration.

Loans²¹:

Bank finance is typically sought by acquirers when they have low cash reserves and a sizable relative transaction size. Acquisitions that are wholly bank-financed are linked to huge and disproportionately high acquirer announced returns. Returns on announcements are also correlated favorably with the percentage of purchase value covered by bank financing. The advantages of bank financing are especially significant for acquirers that perform poorly as well as acquirers that are dealing with significant informational asymmetries (because banks are more likely to provide financing than other types of lenders; they have more information about target companies and can provide more favorable terms). In tender offers, bank debt plays a crucial certifying and oversight role for potential buyers.

Therefore, interest rates are crucial when funding M&A deals with debt, and low rates will increase the number of deals that are financed with loans.

If the target is a publicly traded company, the buyer (the bidder) must ensure that they can complete the transaction if the selling shareholders accept the offer. This signifies having enough cash on hand to complete the transaction. Before launching a public takeover bid, you must have a written loan agreement in place and be able to withdraw money without restrictions. When the acquirer's cash reserve is small or the takeover is relatively large, bank financing is more common.

²¹ Evans, S. (2022, September 22). How to fund a business acquisition. Harper James; Harper James Solicitors. <https://harperjames.co.uk/article/how-to-fund-an-acquisition/>

Banks have a role in screening and monitoring. When acquirers have greater managerial ownership and consequently stronger incentives to make acquisitions that add value, bank financing is more frequently seen. However, it appears that a first-order determinant of bank financing is the requirement for external financing. Bank finance is more likely to be used by acquirers who are anticipated to have a high demand for external funding (such as those with little internally generated money and those doing larger acquisitions). Financial slack can be helpful in avoiding the informational frictions related to external financing that Mejers and Majluf (1984) observed, but it can also shield businesses from the screening and monitoring responsibilities of knowledgeable intermediaries like banks.

According to Bolton and Scharfstein (1996), one of the major benefits of using bank debt as a source of funding is how simple it is to renegotiate. Public debt issues are widely held and require unanimous consent of bondholders in order to alter the terms of the contract. Bank debt, on the other hand, it may even be consolidated in the hands of one lender, and is frequently renegotiated, even only to relax a contractual covenant. In contrast to arm's-length creditors, bank lenders are shown to have superior "reorganizational skills" by Cantillo and Wright (2000). They come to the conclusion that negotiating simplicity is a more significant characteristic of bank debt than screening and oversight.

Bank loans are preferred by businesses that have lower shareholder negotiating power.

The "hold-up problem" with bank debt is yet another drawback of the bank's information advantage over arm's-length debt (Rajan, 1992; Houston and James, 1996). By using their insider knowledge, banks can charge borrowers greater rates than they would otherwise be required to pay and collect monopoly rents from them. Therefore, in order to reduce the monopolistic power of their bank lenders, borrowers have an incentive to look for other financing kinds.

The availability of bank loans affects debt decision in two ways. First, it has an impact on the possibility of locating knowledgeable private lenders. Second, it influences their negotiating position at the time of issuance, which has an impact on the price of private debt.

The company has the option to choose to issue public debt rather than private debt. Public debt arrangements are not renegotiable, as stated in Bulow and Shoven (1979) and Gertner and Scharfstein (1991). Therefore, public debt is not susceptible to search frictions and does not call for any specialized knowledge. The cost of issuing governmental debt is proportionate. Evidence from Becker and Ivashina (2012) suggests that businesses migrate from loan to bond financing when lending standards are strict. Furthermore, due to businesses' difficulties in locating knowledgeable, credit-ready private creditors during the sovereign debt crisis, syndicated bank loan lending has considerably decreased in the Euro zone. As a result, these companies have switched to issuing bonds, which has caused a major boom in the European corporate bond

market. allowing some of the investment excess to be taken by holders of public debt (Morellec et al., 2015)²².

Debt Securities:

If the company uses debt securities to finance an acquisition, the business will give investors notes or bonds in exchange for money. A debt from the issuer of the security to the lender is represented by the debt security. They comprise a pledge from the issuer (the business) to pay an investor (the owner of the debt security) a specified sum. Usually, the commitment is to make a payment on or before the deadline.

Debt securities are categorized based on the traits they exhibit. This could relate to the method of interest payment, the kind of investors, or the grace period before repayment. Several of the various debt securities categories include Bonds and Eurobonds, MTN and EMTN, commercial paper, convertible bonds, credit-linked notes, exchangeable bonds, green bonds, high yield bonds, project bonds, asset-backed securities (ABS).

Issuing bonds is a strategy to raise money for business acquisitions in which cash can be raised quickly and easily through corporate bonds, either from current shareholders or from the general public. Investors effectively lend money to the corporation by buying these bonds in the hopes of earning a return on their investment over time, but once the investment has been made, their money is locked in and cannot be accessed until the bonds' maturity date.

Both Dann and Mikkelson (1984) and Eckbo (1986) indicate negative price reactions to convertible public bond offerings but non-positive price reactions to straight debt issues. For private placements of straight debt issues, Chandra and Nayar (2008) find favorable short-term pricing impacts but negative long-term price effects. They come to the conclusion that these debt issues do not have a certification effect.

According to current capital structure theories, debt capacity is both a positive and a negative function of tangible assets, earnings growth, and asset diversification (Hovakimian, Opler, and Titman, 2001).

Businesses with more tangible assets have access to more private bank loans as well as public bond market borrowing. Larger companies, which are often more diversified, have a lower likelihood of bankruptcy at a given leverage ratio and a higher debt capacity. Additionally, particularly in relatively large deals, a lender may be less willing to finance a bidder's cash offer due to these financing restrictions and bankruptcy risk factors.

The combined debt capacity of the merging company determines the amount of debt financing in M&A financing. For example, a debt/EBITDA ratio of 6x would mean that the corporation may borrow up to 6

²² Morellec, E., Valta, P., & Zhdanov, A. (2015). Financing investment: The choice between bonds and bank loans. *Management Science*, 61(11), 2580–2602. <https://doi.org/10.1287/mnsc.2014.2005>

times its EBITDA. It is often calculated using an EBITDA multiple. The consolidated risk of the combined entity determines the interest rate charged. Debt financing could be detrimental to the borrowing company's credit ratings.

2.11. Bonds or Loans?

All forms of borrowing raise a company's leverage while keeping everything else constant. However, different kinds of debt have varied effects, particularly on businesses with high levels of leverage.

Bank loans offer the advantage of quality certification and simplicity in renegotiations due to the monitoring function that banks perform in the market. For heavily leveraged businesses looking for M&A funding, both advantages are useful. Pursuing bank loans, however, may result in the hold-up problem.

By pursuing arm's length public bonds or non-bank private debt, businesses can lessen the hold-up problem or go around it in order to prevent this exploitation. In order to make informed decisions about financing, businesses must analyze both the advantages and disadvantages of various forms of debt.

Firms with leverage over the optimal range tend to shun bank financing and favor public bonds before engaging in M&A activities.

Businesses are more likely to issue bonds and use equity to finance projects if they have more opportunities for growth, more negotiating power in default, operate in more competitive product markets, and have access to less credit.

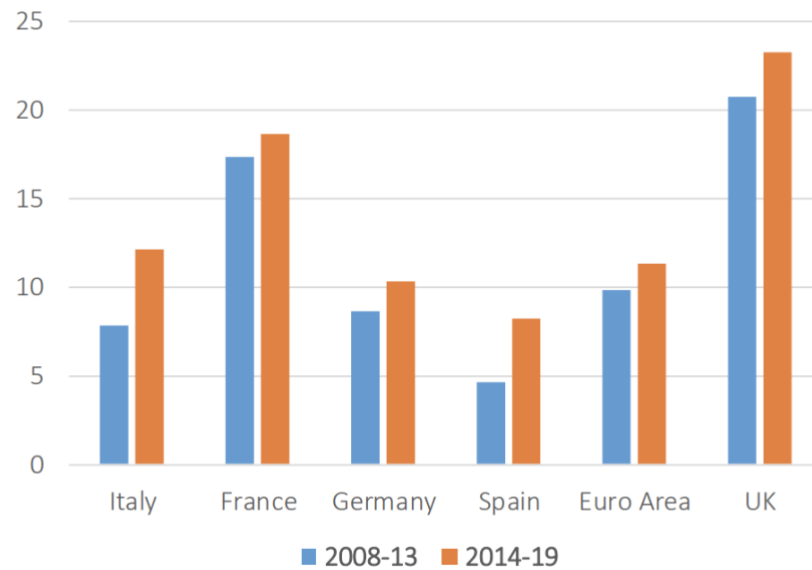
During times of crisis, corporate issuers typically replaced bank loans with bond financing. Larger and riskier issuers reduced their bank dependence (the percentage of bank credit to total assets) substantially more than highly rated issuers did by substituting a sizable part of bank loans with bonds. While the availability of market-based financing helped businesses diversify their funding sources, it also reinforced their financial structures by lowering their overall debt loads.

Since at least 2014, the bond market has become more popular as a source of fundraising for businesses. The average European ratio of bond debt to total financial debt during the 2008–2013 period, which was marked by two crises episodes in the years 2007–2008 and 2012, was 9.7 percent, and countries with more developed capital markets, such as France (17.1%) and the UK (22.8%). A time of economic recovery from 2014 to 2019 saw the bond market play a bigger part in financing NFCs (Meucci and Parlapiano).²³

²³ Corporate bond financing of Italian non-financial firms by Giorgio Meucci and Fabio Parlapiano. Bancaditalia.it. https://www.bancaditalia.it/pubblicazioni/qef/2021-0655/QEF_655_21.pdf

Figure 1: Bonds to financial debt ratio

(per cent)



Source: Bank of Italy, Financial accounts.

2.12. Effects of funding choices

The choice of funding has a considerable effect on the bidder firm's value. When estimating the potential synergistic value of the takeover at the announcement, investors take into account the information signaled by the choices of the payment method and the sources of takeover financing. It is typical for equity-paid takeovers and other equity-financed takeovers (including cash-paid and mixed-paid M&As) to have a materially negative price revision after the announcement of a takeover. The findings support the idea that equity difficulties are viewed by investors as a sign that the company's shares are overpriced. Acquisitions financed with internally produced cash underperform debt-financed agreements, which shows that investors are wary of the possibility that cash-financed transactions are motivated by managerial ambitions for corporate empire.

The source of funding for tender bids has also a significant impact on both the acquisition's characteristics and the market's response. Investors appear to favor tender offerings that are wholly supported by bank debt. For cash tender offers wholly sponsored by banks, three-day announcement returns average 4% and are statistically significant. In contrast, tiny and statistically insignificant announcement returns are linked with cash tender offers supported fully by financial slack or partially by banks. The announcement returns for acquisitions with bank financing rise with the extent of bank financing and are more advantageous when the acquirers are underperforming, small businesses, and have relatively large stock return variability.

2.13. IG bonds and IG bonds financing effects on financial risk

Any bond, bill, or note purchase or sale are coupled with a credit rating. The strength and debt burden of the organization affect its grade over time. A company's rating will be lowered if it takes on more debt than it can manage or if its profits outlook deteriorates. The company's grade will typically rise if it discovers a strategy to raise potential earnings or lower its debt.²⁴

Investment-grade Bond (or High-grade Bond) are “bonds that are believed to have a lower risk of default and receive higher ratings by the credit rating agencies, namely bonds rated Baa (by Moody's) or BBB (by S&P and Fitch) or above. These bonds tend to be issued at lower yields than less creditworthy bonds.”

(Investment-grade bond (or high-grade bond), n.d.)²⁵

The lower cost of borrowing compared to normal bonds is because investors are willing to accept lower interest rates in exchange for the lower risk of default associated with IG bonds.

In addition, IG bond issuance may be subject to fewer regulatory requirements compared to normal bond financing, which can make the process of issuing IG bonds simpler and less costly for the issuer.

Therefore, the type of bond financing a company chooses can have a significant impact on its financial risk. Companies that issue IG (Investment Grade) bonds typically have lower financial risk, as they are considered to be more creditworthy by investors due to their higher credit ratings. Additionally, the lower risk of default associated with IG bonds can help to increase investor confidence and reduce the likelihood of credit downgrades or other negative credit events.

While IG bond issuance may be a more attractive option for companies with a strong credit rating, normal bond financing may be the only viable option for companies with lower credit ratings. Investment grade debt typically has fewer restrictions, is unsecured and unsubordinated, and pays lower interest rates than sub-investment grade debt. Longer maturities than high-yield bonds are possible for investment grade bonds. Investment grade bond issuers frequently have the option to redeem their bonds at any point before maturity by paying a make-whole premium (Kelly et al., n.d.)²⁶.

Companies that issue regular bonds, on the other hand, may face greater financial risk since investors view them as being riskier and giving them lower credit ratings. Due to the increased risk, investors may demand

²⁴ What does investment grade mean? (2018, January 15). Investopedia. <https://www.investopedia.com/ask/answers/what-does-investment-grade-mean/>

²⁵ Investment-grade bond (or high-grade bond). (n.d.). Investor.gov. From <https://www.investor.gov/introduction-investing/investing-basics/glossary/investment-grade-bond-or-high-grade-bond>

²⁶ Kelly, M. M., Dolan, D., & Llp, M. (n.d.). Acquisition finance in the United States: Overview. Cravath.com, from <https://www.cravath.com/a/web/9yh2SgQWVVoXZwgJyd9qAUU/4VAWkJ/acquisition-finance-in-the-united-states-overview-1-625-7215-publication-pdf-b.pdf>

larger returns, which might raise interest rates and increase the cost of borrowing. Normal bond-issuing companies may also be more susceptible to credit downgrades or other adverse credit developments, which might further raise their financial risk.

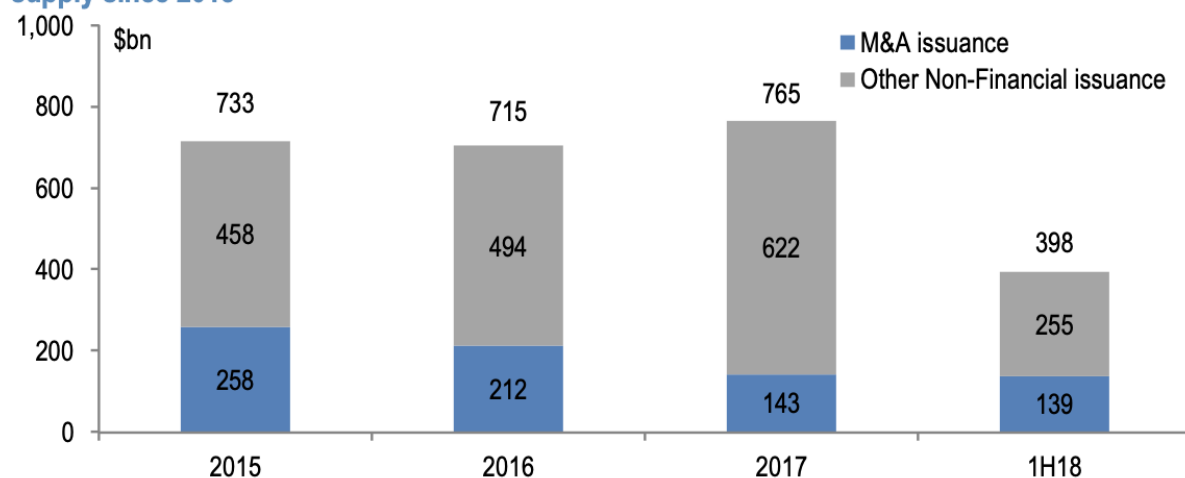
Overall, a company's financial risk, capacity to acquire capital, and ability to manage its debt can all be significantly impacted by the choice of bond financing. When deciding between IG bond issuance and regular bond financing, companies must carefully analyze their credit rating, market conditions, and investor demand in order to reduce their financial risk and increase their access to capital at the lowest feasible cost.

2.14. M&A impact on leverage

M&A has been a key driver of HG supply and higher corporate leverage.

The US High Grade corporate bond market has expanded significantly over the past years, helping companies fund their investment and growth needs. A key use of funding from the market recently has been for Mergers and Acquisitions (M&A), which from 2015 to mid-2018 represented 29% of the bond issuance for non-Financial companies.

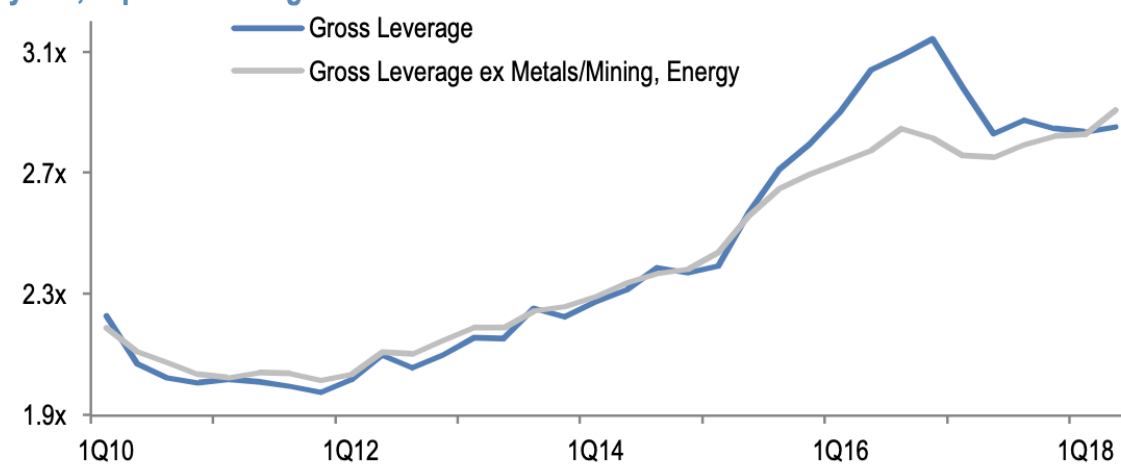
Exhibit 1: M&A related bond issuance has accounted for 29% of all non-Financial HG bond supply since 2015



Source: J.P. Morgan, Dealogic

In most M&A transactions, a firm increases its leverage and subsequently seeks to reduce this leverage by achieving cost- and/or revenue-saving synergies. M&A is a naturally bullish transaction because a firm is (often) taking on additional debt in the hope that their leadership skills and the market potential will enable them to benefit from the greater size. In the majority of transactions, a firm will disclose an estimate of the synergies they expect to realize. They typically state a future leverage target (or other financial measures) that they hope to reach at a future (sometimes predetermined) time period.

Exhibit 2: The leverage of US HG non-Financial companies has risen sharply over the past few years, in part due to significant M&A

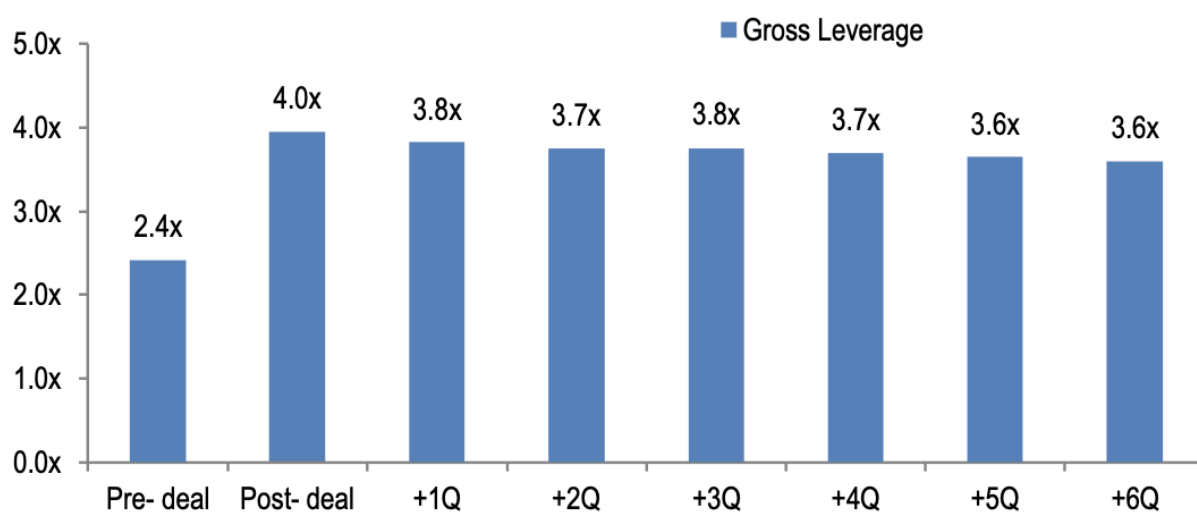


Source: J.P. Morgan, Capital I.Q.

The majority of transactions have deleveraged to some extent, albeit only modestly.

Leverage increased, on average, from 2.4x before the deal to 4.0x when the deals were finalized. Leverage had decreased to 3.6x six quarters later, meaning that 1.5 years after the deal, around 25% of the increase in leverage had been unwound.

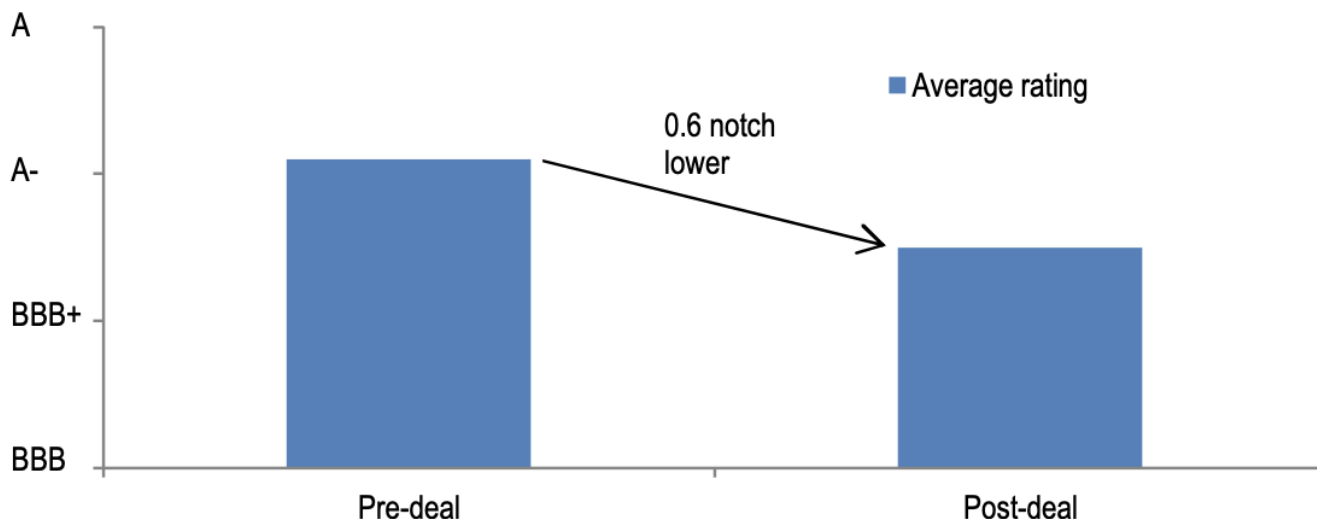
Exhibit 3: Leverage rose by 1.6x, on average, for the 32 transactions since 2015 which we review in this note



Source: J.P. Morgan, Capital I.Q.

Ratings are sometimes downgraded in M&A transactions because of the additional leverage and the uncertainty that comes with an unproven integration between two formerly different organizations. The disclosed integration/deleveraging strategies of the combined firm are frequently evaluated by the rating agencies as part of their evaluation process. Their evaluation will indicate how credible they find the strategy to be, to a certain extent. In general, the rating given today will be higher than it would be if only the most recent metrics were used.

Exhibit 4: Ratings were downgraded by an average of 0.6 notches for the M&A deals in our sample. This seems too modest a deterioration given the increase in leverage



Source: J.P. Morgan, Moody's, S&P and Fitch

Post deal ratings improvement of these transactions has been modest. After 6 quarters the majority of the companies are rated the same as at the time of the deal closing, few are higher rated and lower rated. The fact that there has been such a modest rating upgrade trend reflects the high starting leverage for the rating bucket in many cases. The companies were already given credit for their deleveraging targets in the initial rating, so there was little room for rating improvement.

The financial community is now concerned that the ratings after some M&A transactions may be excessive. Because the rating agencies are giving the company's credit for a strategy to enhance their leverage and/or other financial metrics coming forward, in certain circumstances, companies are beginning out with leverage measures that are far higher than those normal for the issued rating. Ratings downgrades are frequently anticipated if the deleveraging or other financial goals that were pledged are not met²⁷.

Exhibit 7: M&A performance by sector

	Gross leverage			Rating change since pre-deal		Outperformance of 10Y bond issued for M&A deals 6 quarters after the close
	Pre-Deal	Post deal	+6Q	Post deal	+6Q	
Healthcare & Pharma	2.0x	3.8x	3.5x	0.8 lower	1.1 lower	9bp / 40bp (ex-Teva)
TMT	2.6x	3.2x	3.0x	1.5 lower	1.5 lower	57bp / 10bp (ex-Dell)
Consumer Noncyclicals	2.7x	5.4x	4.7x	0.1 higher	0.1 higher	10bp
Other	2.5x	4.1x	3.7x	0.9 lower	1.0 lower	22bp
Total	2.4x	4.0x	3.6x	0.6 lower	0.7 lower	23bp / 24bp (ex-Dell & Teva)

Source: J.P. Morgan

²⁷ Jp-Morgan-the-M&a-Wave-Risk-and-Reward.Pdf, from <http://jp-morgan-the-m&a-wave-risk-and-reward.pdf>

2.15. M&A impact on financial risk

In addition to having a large impact on an acquirer's future operations and growth, M&As can also considerably change its risk profile (Chen, Han, & Zeng, 2017). For instance, Furfine & Rosen (2011) came to the conclusion that M&As increase the overall risk of default for the acquiring company (Oran & Kozol, 2021)²⁸.

A rise in acquirer default risk could simply be the result of taking on the target's risk. The way bond prices react to merger announcements provides proof of risk transfer. Risk transfer to target bond holders is consistent with the bonds of target firms tending to appreciate if and only if the acquiring firm's bonds are higher rated (Billett et al., 2004; Kedia and Zhou, 2011). Though, risk transfer cannot fully account for the observation that acquirer risk increases after a merger. The aggregate risk following a normal merger is greater than the risk of the acquirer and the target combined on a pro forma basis. Finally, when the risk of buyer and target default is considered by estimating the volatility of the cash flows of the target and buyer sectors, the risk of default increases for buyers, whether the target is from the same sector, from a riskier sector, or from a less risky sector.

Changes in financial leverage also result in an increase in acquirer default risk. Following mergers, businesses increase their leverage (Ghosh and Jain, 2000). According to a theoretical model developed by Morellec and Zhdanov (2008), firms that prevail in takeover wars will have low leverage, therefore acquirers should increase leverage after a merger, which could enhance risk.

Asset diversification states that, absent any countervailing action by the managers of the acquiring firm, the merging of two imperfectly correlated firms should result in a decrease in default risk for the combined entity. Although it might make sense for businesses to offset some of the risk reduction brought on by asset diversification by maximizing the tax benefits of debt (Lewellen, 1971) or recouping bondholder wealth (Kim and McConnell, 1977), theories have not yet offered justifications for why a business might increase leverage to the point where such actions would outweigh the risk reduction brought on by diversification.

More nuanced hypotheses suggest that managers might make acquisitions that increase risk because of the personal rewards they bring. Despite a reduction in shareholder wealth, acquisitions typically result in a rise in managerial compensation, including bonuses (Bliss and Rosen, 2001; Grinstein and Hribar, 2004). Recent research (Cai and Vijh, 2007; Harford and Li, 2007) suggests that the type of compensation offered may

²⁸ Oran, J., & Kozol, E. (2021). Financial risk management and firm performance: Evidence from European cross-border mergers and acquisitions. *Öneri Dergisi*. <https://doi.org/10.14783/maruoneri.788480>

have an impact on takeover choices. These publications uncover data supporting a relationship between the performance of acquirer stocks and CEO compensation based on options. Increasing risk is one approach for a manager to boost option-based remuneration.

The impact of asymmetric information plays a part in why mergers could raise risk. According to Moeller et al. (2007), it is possible to estimate acquirer stock returns using proxies for asymmetric knowledge. Managers are better equipped to conceal potentially value-decreasing activities from external shareholders when there is more asymmetric information available. Idiosyncratic stock volatility is one indicator of asymmetric information, and larger values of this indicator may make it simpler for managers to conceal risk-increasing actions because they could be perceived as reflecting a random outcome with higher ex ante uncertainty (Dierkens, 1991). We discover a substantial correlation between idiosyncratic volatility and increases in acquirer default risk, which is consistent with company management being better able to conceal riskier mergers from outside shareholders due to asymmetric information.

However, findings show that risk-increasing mergers are not the outcome of purchases made possible by overpriced shares. The tendency of mergers financed with stock to be connected with risk reduction after adjusting for other variables suggests that utilizing stock as payment may lessen the need to issue debt after the merger (Furfine & Rosen, 2011)²⁹.

The choice of payment method can have a wide range of effects on a business. The management decision to use a certain payment mechanism has an impact on ownership, risk to the organization, and financial leverage (Sabrie et al., n.d.)³⁰. According to research showing that the method of payment and measures of stock misvaluation affect both the announcement and post-merger acquirer stock returns (Dong et al., 2006; Rhodes-Kropf et al., 2005; Shleifer and Vishny, 2003), companies whose stock price is perceived to be overvalued may be more willing to undertake a risk-increasing acquisition.

Debt to equity ratio is the financial ratio used to determine the relative proportion of equity and debt used to finance a company's assets. It identifies the leverage used in the firm. Usage of more debt over time increases the financial risk of the shareholders. However, if the return on capital employed is greater than the fixed cost of the debt, then leverage benefits can be attained by increasing the amount of equity in the company.

Successful mergers and acquisitions can result in improved financial performance, but they can also result in rising working capital and debt-to-equity ratios. Since current assets are viewed as non-earning assets and

²⁹ Furfine, C. H., & Rosen, R. J. (2011). Mergers increase default risk. *Journal of Corporate Finance*, 17(4), 832–849. <https://doi.org/10.1016/j.jcorpfin.2011.03.003>

³⁰ Sabrie, R., Wikström, L., & Metzger, D. (n.d.). The aftermath of the financial crisis. Hhs.Se., from <http://arc.hhs.se/download.aspx?MediumId=2572>

long-term funds are viewed as having fixed explicit expenses that are financing the current assets over and above current liabilities, this can be seen as a significant financial burden on the company (Kumar & Bansal, 2008)³¹.

2.16. How to establish the impact of the M&A acquisition on financial risk

Assessing the impact of mergers and acquisitions (M&A) on the financial risk of a company requires a comprehensive analysis of several financial metrics. To establish the impact of M&A acquisitions on the financial risk of a company, these are some steps that could be followed:

Assess the financial health of the target company: Before acquiring a company, it is important to assess its financial health by analyzing its financial statements, cash flows, debt levels, profitability, and other relevant financial metrics. This analysis will provide insights into the level of financial risk associated with the target company.

Identify the financing structure of the acquisition: Determine how the acquisition will be financed, whether through equity, debt, or a combination of both. This will help to understand the potential impact of the acquisition on the financial risk of the acquiring company.

Analyze the impact on profitability: Assess the impact of the acquisition on the profitability of the acquiring company by analyzing the potential cost savings, revenue synergies, and other benefits that may result from the acquisition. This analysis will help to understand whether the acquisition will result in increased profitability, which may offset any increase in financial risk.

Analyze the impact on leverage: Analyze the impact of the acquisition on the leverage of the acquiring company by calculating relevant financial metrics such as the debt-to-equity ratio, interest coverage ratio, and other relevant metrics. This will help to understand whether the acquisition will increase the level of financial risk of the company.

Analyze the impact on liquidity: Assess the impact of the acquisition on the liquidity position of the acquiring company. This can be done by analyzing the cash flow statements of the company to determine whether the acquisition will put a strain on the company's cash reserves or result in a significant increase in debt levels.

³¹ Kumar, S., & Bansal, L. K. (2008). The impact of mergers and acquisitions on corporate performance in India. *Management Decision*, 46(10), 1531–1543. <https://doi.org/10.1108/00251740810920029>

Assessing the impact of a M&A deal on the financial risk of the firm will allow to make informed decisions regarding the acquisition.

3. M&A IN THE TMT SECTOR

3.1. The TMT sector

The technology, media, and telecom (TMT) sector groups businesses with a focus on emerging technologies. The combined Technology, Media and Telecom market size is currently estimated at \$5.1 trillion.

TMT can be broken down into subsectors, such as hardware, semiconductors, software, media, and telecom, because this industry segment covers such a wide range of topics. A lot of mergers, acquisitions, and initial public offers (IPOs) occur in the TMT industry because it houses innovative and high-tech companies.

Additionally, each subsector has various growth indicators and outlooks (Chen, 2016).³²

TMT firms make up seven of the top 10 publicly traded enterprises. A rapidly growing group of disruptive players, including Alibaba Group, Alphabet, Amazon, Facebook, Netflix, and Salesforce, have joined market leaders like Apple, Disney, and Verizon. They have all benefited from consumers' and businesses' increasing appetite for technology goods and services.³³

The hardware firms include computer manufacturers (IBM, Dell, HP), as well as those of server systems, mobile phones, tablets, and storage devices like hard drives and memory. In the hardware industry, semiconductor companies design and create integrated circuits and microchips that are utilized in a wide range of applications. The following companies serve as examples: Intel, AMD, Nvidia, Texas Instruments. Applications for computers or mobile devices are created by software companies for both consumers and businesses. Some of the leading software companies are SAP, Adobe, and Microsoft.

Additionally, businesses in the media and telecom sectors are crucial to the TMT industry. Multimedia material is created, produced, and distributed by media companies for TV, print, and the internet. This subsector includes social media firms, cable TV providers, television networks, and production studios. Last but not least, the telecom industry is centered on companies that provide phone, TV, and internet services. The business is dominated by a number of important telcos, including AT&T and Verizon.

With rapid innovation and the launch of new products and services, the TMT sector is characterized by a high level of technological change. Additionally, the industry is heavily regulated, with oversight from the

³² Chen, J. (2016, March 7). What is the technology, media and, telecom (TMT) sector? Investopedia. <https://www.investopedia.com/terms/t/technology-media-and-communications-tmc-sector.asp>

³³ Kaur, V., Kutcher, E., Patel, D., & Tandon, S. (2019, October 1). Resilience in TMT: Winning in downturns. Mckinsey.com; McKinsey & Company.

government and license requirements. This is because TMT is a critical infrastructure that is essential for the functioning of the economy. Governments regulate TMT to ensure that it is reliable, affordable, and accessible to all.

Corporate consolidation has traditionally been pushed by the nature of telecommunications and technology, which has large, fixed costs and low marginal costs. Because firms that offered traditional TMT services were protected from the majority of foreign competition by government regulation, they mainly relied on economies of scale and engaged in little international competition. The competitive environment underwent a significant transformation in the late 20th century because of broad deregulation, privatization, technological advancement, and globalization (Warf, 2003).

The size and dynamicity of TMT companies have increased as a result of their use of horizontal integration to boost their competitiveness and enter new markets. As a result, industries in North America and Europe have become increasingly oligopolized (Harper 1997; Trillas 2002). In fact, the expansion and development of the European Union in Europe have sparked a surge of merger activity that has never before been seen, particularly in the financial and banking sectors (Lindblom and Von Koch 2002; Torella and van der Wee 2002).³⁴ The 2016 combination of Dell and EMC is one example of a merger within this industry. 2016 saw the merger of Microsoft and LinkedIn, while the union of AT&T and Time Warner happened in 2018.

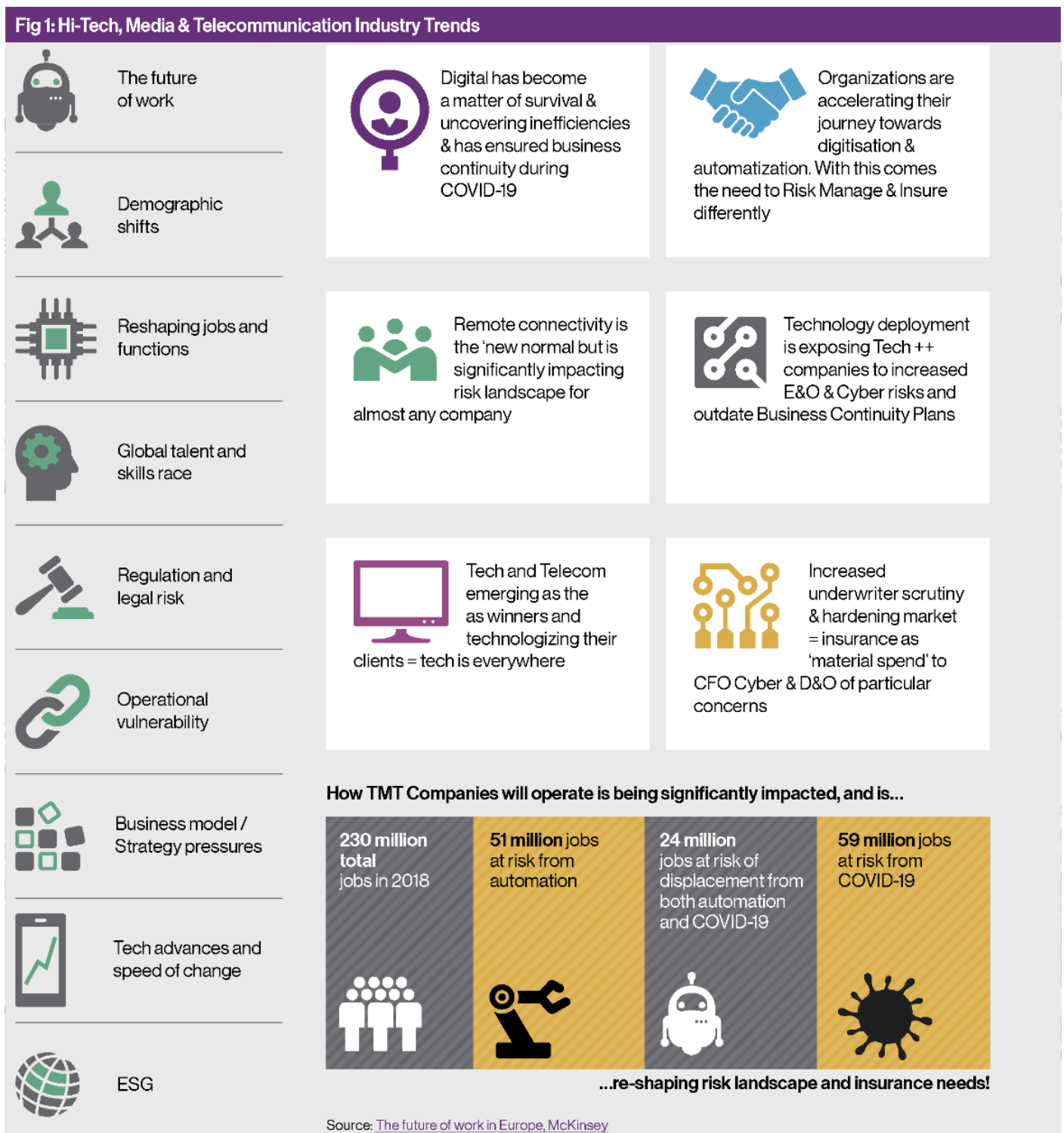
3.2. TMT industry risks and trends

The risk environment in the TMT sector is constantly evolving due to factors like connectivity demand, competition from new entrants, and technological advancements. Rapid innovation and increased technology proliferation contribute to this dynamic landscape.

Geopolitical concerns impact global trade agreements and supply chain vulnerabilities, with nationalism and domestic security worries driving TMT executives to prioritize these issues. Operational complexity, including reliance on outsourcing partners and component shortages, further heighten risks and uncertainty. Concerns about corporate financing are also expanding. The topic of inflation has come up again, and there is new volatility on the financial markets around the world. Concerns with funding, liquidity, credit risk, gearing, and debt are common among businesses. The technology and the telecom sectors, in particular, will remain under financial pressure to make necessary investments, with M&A on the table as an option for some companies. Regulatory and legal risks are growing, particularly in data protection, privacy, and ESG areas. Climate risk and D,E&I have gained significant importance. Cyber threats and risks associated with new business models remain high, while compliance with data protection rules is a struggle without

³⁴ Warf, B. (2003). Mergers and acquisitions in the telecommunications industry: Mergers and acquisitions. *Growth and Change*, 34(3), 321–344. <https://doi.org/10.1111/1468-2257.00221>

standardized frameworks. Lastly, the TMT industries face a persistent talent shortage, hindering their ability to attract and retain necessary skills. Despite increasing demand, few organizations have implemented effective strategies to address this issue.



Beyond these fundamental elements, the biggest change has been the perception that company models and strategies require unheard-of adaptability. For TMT companies that need to change their business models or

increase profitability, mergers and acquisitions remain popular. However, if a business is perceived to be stifling competition, antitrust issues are becoming increasingly common.³⁵

3.3. Financial risk of TMT sector

Since the TMT sector is a fast-growing market with lots of room for innovation and disruption, the industry can be exposed to a high level of financial risk, particularly given the dynamics of its continuously shifting market and the possibility of the emergence of new rivals.

Specific factors that contribute to financial risk in the TMT sector include:

- High capital expenditure requirements: To stay competitive, many TMT companies must invest considerable amounts of capital in infrastructure, marketing, and research & development. High levels of debt and financial leverage may result from this.
- Market volatility: The TMT industry is prone to quick changes in consumer behavior and technology, which can cause big swings in sales and profitability. Businesses that are unable to quickly adjust to shifting market conditions may find it difficult to retain their financial stability. The threat of financial market instability includes adequate funding and liquidity, potential credit risk and corporate debt-to-equity ratios.
- Intense competition: The TMT industry is very competitive, with many players vying for market share in quickly changing markets. Pricing pressure and reduced margins may result from this, which may have an effect on profitability and financial stability. As the US, Japan, Europe, and China support "national champions" in the industry to advance the position of their respective countries, value systems, and technological standards, it appears that the competition for dominance in high technology may become central to geostrategic competition.³⁶
- Regulatory risk: The TMT industry is subject to a variety of regulations, including laws governing data privacy, intellectual property, and telecommunications. The financial success of TMT enterprises can be significantly impacted by changes in regulatory frameworks.³⁷
- Cybersecurity risk: TMT companies are often subject to cyberattacks, which can result in significant financial losses, reputational damage, and regulatory fines. These industries are particularly

³⁵ Risks on the Horizon. Willis Towers Watson (2021). Technology, Media and Telecommunications Futures Report, from <https://willistowerswatson.turtl.co/story/wtw-technology-media-and-telecommunications-futures-report-risks-on-the-horizon-2021-gated/page/1>

³⁶ Managing the new political risks in the technology sector. (n.d.). Willis Towers Watson, from <https://www.wtwco.com/en-GB/Insights/2021/02/managing-the-new-political-risks-in-the-technology-sector>

³⁷ Top 7 risks facing the TMT industry. (n.d.). BDO, from <https://www.bdo.com/insights/industries/technology/top-7-risks-facing-the-tmt-industry>

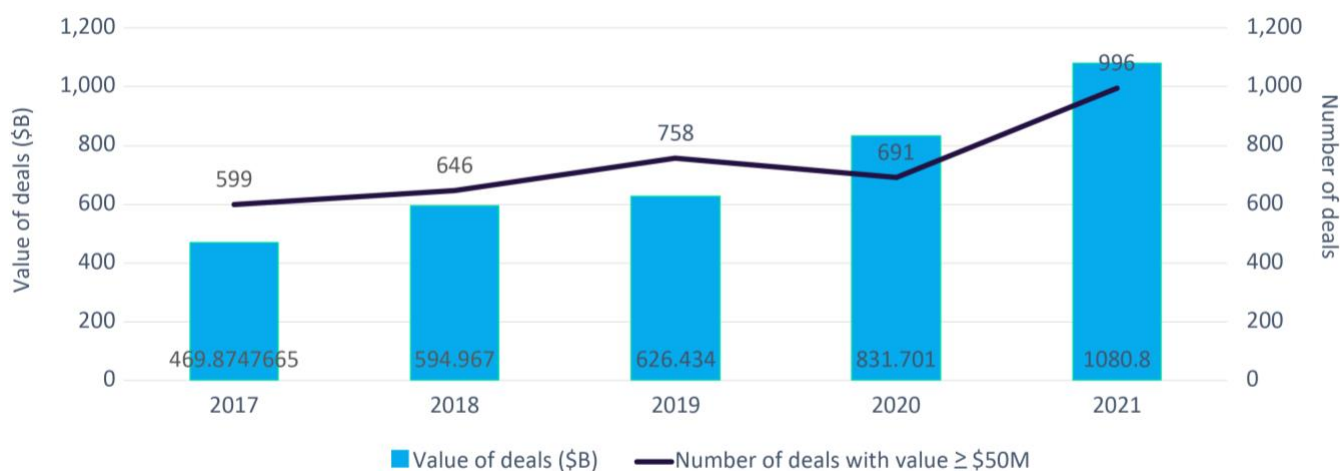
vulnerable to cyber threats due to the high value of their data and intellectual property (Experts, 2020).³⁸

3.4. TMT sector M&A

TMT makes for over 25% of all M&A deals today, making it the largest and most active industry when compared to other sectors. Over 1.8 trillion dollars globally were spent on M&A acquisitions in this industry between January and December 2021³⁹, that was up 30% from 2020.

A total of 996 merger and acquisition (M&A) deals with a transaction value of more than \$50 million were announced in the global TMT sector in 2021, according to GlobalData "Mergers and Acquisitions (M&A) in Tech, Media, & Telecom (TMT) 2021 Themes - Thematic Research." Deal volume increased overall by 44% from 2020.⁴⁰

M&A deals in the global TMT sector by deal volume and deal value, 2017-2021:



Source: GlobalData

The TMT industry's M&A activity is influenced by a variety of factors. These causal forces are typically believed to enhance the companies' productivity and profitability, however other factors, including maximizing market share or diversifying into new product categories, are also significant. As a result, "mergers for efficiency" and "mergers for diversity" can be distinguished (Lubatkin et al. 1997). The size, speed, and specifics of mergers depend on ownership (single proprietors frequently have dynastic growth ambitions), shareholders' risk aversion, the timing of a buyout (first entrants into a market frequently receive price discounts), and the presence of suitable substitutes (Fauli-Oller 2000; Eisenmann 2000;

³⁸ Experts, H. (2020, November 27). Cyber readiness: The state of play in technology, media and telecommunications. Hiscox.co.uk; Hiscox. <https://www.hiscox.co.uk/business-blog/cyber-readiness-state-play-technology-media-and-telecommunications>

³⁹ Value of global M&A transactions by sector 2021. (n.d.). Statista, from <https://www.statista.com/statistics/520801/value-of-manda-transactions-by-sector/>

⁴⁰ ShieldSquare captcha. (n.d.). Globaldata.com, from <https://www.globaldata.com/media/thematic-research/tmt-ma-deals-crossed-record-breaking-1-trillion-deal-value-2021-says-globaldata/>

Selden et al. 2000). Globalization, deregulation, technological advancement (i.e., the digital revolution), the pursuit of scale and scope economies, and benefits provided by U.S. corporate tax laws are the main reasons behind this M&A activity.⁴¹

With most transactions being financially accretive and beneficial diversifiers, M&A activity in the TMT sector has typically produced good results for the acquirers. A favorable economic environment, along with ample cash balances and free cash flow, has lessened concerns about leverage and accelerated deleveraging across our industries. Given the sizeable cash reserves and positive free cash flow (FCF) of the acquirers, leverage remained at relatively low levels. Additionally, the deal favorably broadens and diversifies the product portfolios of each company, improving their competitiveness in the quick-moving technology industry.

Date Closed	Acquirer	Acquired	Deal Debt \$bn	Pre-deal Leverage	Post-deal Leverage	Cumulative leverage change post close						Leverage Target	Goal Achieved?
						+1Q	+2Q	+3Q	+4Q	+5Q	+6Q		
Sector Summary (debt weighted)			94.1	2.7x	5.4x	-0.2x	-0.3x	-0.2x	-0.7x	-0.6x	-0.6x		
TMT													
29-Dec-15	Intel Corp	Altera Corp	7.0	0.6x	1.0x	+0.1x	+0.3x	+0.1x	+0.1x	+0.1x	+0.3x	N/A	Yes
2-Feb-16	Avago	Broadcom	9.0	1.5x	2.9x	-0.3x	-0.5x	-0.6x	-0.8x	-0.9x	-0.6x	2x	Yes
18-May-16	Charter	Time Warner Cable	19.0	4.2x	4.4x	-0.2x	-0.3x	-0.3x	-0.3x	-0.0x	+0.1x	4.0x-4.5x	Yes
7-Sep-16	Dell Technologies Inc	EMC Corp	20.0	3.6x	5.4x	+0.8x	+0.7x	+0.7x	+0.4x	-0.2x	-	IG rating in 2 years	No
7-Nov-16	Oracle Corp	NetSuite Inc	9.3	2.6x	3.2x	0.0x	+0.1x	-0.2x	+0.2x	+0.1x	0.0x	N/A	Yes
8-Dec-16	Microsoft Corp	LinkedIn Corp	19.8	1.9x	2.4x	-0.2x	-0.3x	-0.1x	-0.3x	-0.3x	-0.7x	N/A	Yes
13-Mar-17	Analog Devices Inc	Linear Technology	2.1	1.4x	3.7x	-0.3x	-0.6x	-1.1x	-1.3x	-	-	2.3x in 2 years	Yes
13-Mar-17	Verizon Communications	Yahoo Holdings Inc	4.5	2.4x	2.7x	0.0x	-0.1x	-0.1x	-0.2x	-	-	N/A	Yes
29-Aug-17	Amazon.com Inc	Whole Foods Market	13.7	1.9x	3.1x	-0.3x	-0.6x	-0.9x	-	-	-	N/A	Yes
1-Nov-17	Crown Castle Intl Corp	Lighttower	1.8	6.0x	6.5x	0.0x	-0.6x	-0.9x	-	-	-	4.1-5.1x in the long term	Partially
7-Mar-18	Discovery	Scripps Network	6.3	3.3x	4.6x	-0.2x	-	-	-	-	-	4.1x by YE18, 3.6x by YE19	Too Soon
15-Jun-18	AT&T	Time Warner Inc	22.5	2.8x	3.3x	-	-	-	-	-	-	2.7x by the end of the first year after close	Too Soon

Source: J.P. Morgan, Capital I.Q.

As businesses continue to diversify into high growth industries like autonomous driving, artificial intelligence, data centers, and gaming, M&A is anticipated to continue in the technology sector.⁴²

3.5. DELL acquisition of EMC Corp

3.5.1. Dell Technology background

Dell Technologies Inc. creates, develops, produces, markets, offers for sale, and provides support for a variety of comprehensive and integrated solutions, products, and services in the Americas, Europe, the Middle East, Asia, and worldwide. It dominates 20 Gartner Magic Quadrants for technology and has a portfolio of more than 20,000 patents and applications.

Infrastructure Solutions Group (ISG) and Client Solutions Group (CSG) are the company's two operating segments. The ISG market offers traditional and cutting-edge storage solutions. Additionally, this segment

⁴¹ Warf, B. (2003). Mergers and acquisitions in the telecommunications industry: Mergers and acquisitions. *Growth and Change*, 34(3), 321–344. <https://doi.org/10.1111/1468-2257.00221>

⁴² Jp-Morgan-the-M&a-Wave-Risk-and-Reward.Pdf, from <http://jp-morgan-the-m&a-wave-risk-and-reward.pdf>

provides networking products and services that assist its business clients in transforming and modernizing their infrastructure, enhancing end-user experiences through mobility, and accelerating business applications and processes. It also provides attached software and peripherals, support, deployment, configuration, and extended warranty services. The CSG section offers desktops, workstations, and laptops; displays, docking stations, and other electronics; third-party software, peripherals, and support services; as well as deployment, configuration, and extended warranty services. The company is also engaged in customer financing arrangements; providing cybersecurity technology-driven security solutions to prevent security breaches, detect malicious activity, respond quickly when a security breach occurs, and identify emerging threats; infrastructure-as-a-service solutions; and the resale of VMware goods and services.

In August 2016, the business, which was originally known as Denali Holding Inc., changed its name to Dell Technologies Inc. The headquarters of Dell Technologies Inc. are in Round Rock, Texas, where it was established in 1984.⁴³

Dell Technologies offers a special organizational structure that gives the business the freedom to innovate like a start-up and make long-term R&D investments while yet providing the reliability, customer service, and global reach of a large corporation. The R&D spends for Dell Technologies were \$1.1 billion, \$2.6 billion, and \$4.4 billion in the year 2016, 2017, and 2018, respectively. Furthermore, the company is privately held, allowing it to better focus expenditures on its customer and partner ecosystem over the long term, even though it publicly announces its financial performance.

Dell, Dell EMC, Pivotal, RSA, SecureWorks, Virtustream, and VMware are among the distinctive family of businesses that make up this organization.

Dell EMC, a subsidiary of Dell solutions, enables businesses to update, automate, and transform their data centers, through the use of market-leading converged infrastructure, servers, storage, and data protection solutions. This gives them a solid platform on which to revolutionize their business and IT through the development of hybrid clouds, cloud-native applications, and big data solutions. With the most complete and cutting-edge portfolio in the market, from edge to core to cloud, Dell EMC serves clients in 180 countries, including 98% of the Fortune 500. Dell EMC combines EMC's capabilities with major companies and Dell's go-to-market expertise with small and mid-sized company customers.⁴⁴

⁴³ Dell Technologies Inc. (DELL). (n.d.). Yahoo.com, from <https://finance.yahoo.com/quote/DELL/profile?p=DELL>

⁴⁴ Historic dell and EMC merger complete forms world s largest privately controlled tech company. (n.d.). Dell.com, from <https://www.dell.com/en-us/dt/corporate/newsroom/announcements/2016/09/20160907-01.htm>

3.5.2. EMC background and complexity

Newton, Massachusetts, is where EMC was founded in 1979. EMC had around 400 sales offices in 86 countries at the time of the purchase. The total number of employees at EMC was over 70,000. The company proudly boasted “the world's largest sales and service force focused on information infrastructure” (Corporate Profile, 2016). EMC typically worked with large enterprises, providing solutions that helped store, manage, protect, and analyze their most precious asset—information. The revenue of EMC was \$24.8 billion in 2015 (EMC, 2015).⁴⁵

EMC common stock was listed on the NYSE under the trading symbol “EMC.”

EMC was organized as a federation of related and independent businesses, unlike other corporations. The virtualization industry leader VMWare was managed wholly as a distinct business, to the extent where it has its own stock that is traded publicly. Another significant business was Pivotal, which was founded in conjunction with GE, EMC, and VMWare to help businesses become more digitally focused.⁴⁶

The breakdown of exactly what was within the control of EMC Corporation was a significant aspect of the deal that made it more complicated than most acquisitions. The corporation can be broken down into four main business segments. These are: 1. EMC II– information structure 2. Pivotal 3. VMWare 4. Virtustream. EMC's main business segment was EMC II. It focused on storage systems and software solutions and included VCE (converged infrastructure solutions by fusing virtualization, networking, computing, and storage onto a single platform), RSA Security (produced computer and network security pertaining to data and identity protection), and the Enterprise Content Division (offered data management solutions to enterprises). While VMWare offered virtualization software and services, Pivotal offered cloud computing and big data solutions. The most recent acquisition of EMC, Virtustream, specializes in cloud infrastructure. The breakdown of these different lines of business made the acquisition of EMC more complex than a typical acquisition of a single company. The company’s purpose was to “complete the spectrum” of EMC and VMWare’s pre-existing cloud infrastructure offerings.⁴⁷

3.5.3. An overview of the deal

On September 7th, 2016, Dell Technologies announced the successful acquisition of EMC Corporation. The deal resulted in the development of a distinctive family of companies that offers businesses the foundational

Timing

Date announced:	Oct 12 th , 2015
Date funded:	May 17 th , 2016
Date closed:	Sep 7 th , 2016

Sizing

Deal size:	\$67bn
IG bond issuance:	\$20.0bn

⁴⁵ Dell’s Acquisition of EMC - An Interactive Qualifying Project submitted to the faculty of Worcester Polytechnic Institute

⁴⁶ Kumar, B.R. (2019). Dell’s Acquisition of EMC. In: Wealth Creation in the World’s Largest Mergers and Acquisitions. Management for Professionals. Springer, Cham. https://doi.org/10.1007/978-3-030-02363-8_20

⁴⁷ Meddaugh, C. (2017). An event study analysis of the Dell-EMC merger. Clemson.edu, from https://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=3756&context=all_theses

infrastructure they need to construct their digital futures, change their IT, and safeguard their most valuable asset: information. In the rapidly expanding fields of hybrid cloud, software-defined data center, converged infrastructure, platform-as-a-service, data analytics, mobility, and cybersecurity, this merger produced a \$74 billion market leader with a broad technology portfolio that offers customers solutions for complex problems related to those fields. The world's largest privately controlled technology corporation was created by the merger of Dell and EMC.⁴⁸

Dell Technologies became the world's top seller of storage devices, the second-largest developer of servers, and the third-largest provider of personal computers.⁴⁹

The merger of Dell and EMC is one of the biggest acquisitions in the history of the technology sector. This merger was more difficult to complete than the straightforward acquisition of a single company, also because of its size. When EMC was acquired, all of the smaller businesses that were included in its group were also acquired. EMC was only available at the high cost of \$67 billion due to its magnitude. Moreover, EMC was a publicly owned company while Dell is a private company. In order for EMC to close the purchase, its shareholders had to agree to go private following Dell's example. EMC presented a \$33.15 per share offer to obtain shareholders' approval. Specifically, this was \$24.05 in cash and \$9.10 in VMware tracking stock (Primack, 2015).

Dell sold off several parts of the business, as well as millions of shares of tracking stock and billions of dollars' worth of unsecured junk bonds, to raise this money.⁵⁰

The acquisition between Dell and EMC was overwhelmingly approved by shareholders. The merger received 98% of the vote in favor (Darrow, 2016).⁵¹

Dell made the decision to merge with EMC to pool their strengths in manufacturing digital storage devices and making PCs (Dell Technologies, 2020; Meddaugh, 2017). It needed to expand its business to hold a major share in the data storage market and take control of a portion of the software sector. The reasoning behind the purchase was that Dell was experiencing revenue and margin reductions from 2010 to 2013 due to a slowdown in global PC sales, rising competition, and the cannibalization of traditional PC sales by new hardware innovations. The business needed to use EMC's computer system innovation to provide generating technologies that were competitive. Dell's hardware development was slow in the information technology industry, while the production rates in the software sector were high with significant profit margins, and the merger provided substantial product lines from hybrid computer systems. By merging, Dell would have

⁴⁸ Historic dell and EMC merger complete forms world s largest privately controlled tech company. (n.d.). Dell.com, from <https://www.dell.com/en-us/dt/corporate/newsroom/announcements/2016/09/20160907-01.htm>

⁴⁹ IvyPanda. (2022, June 26). Dell & EMC Corporation Merger and Acquisition. <https://ivypanda.com/essays/dell-amp-emc-corporation-merger-and-acquisition/>

⁵⁰ Meddaugh, C. (2017). An event study analysis of the Dell-EMC merger. Clemson.edu, from https://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=3756&context=all_theses

⁵¹ Dell's Acquisition of EMC - An Interactive Qualifying Project submitted to the faculty of Worcester Polytechnic Institute

maintained its position as the primary provider to retail consumers while moving up to the second spot in the production of digital storage devices. For instance, it has made it possible for the businesses to work together to deliver networking hardware, software, servers, storage devices, and routers as the market demands. The merger also allowed Dell to gain relevance in the cloud-computing era and expand its technology portfolio to include hybrid cloud, converged infrastructure, cybersecurity, software-defined data center, data analytics, and mobility, among other advancements. Deal between Dell and EMC has allowed them to improve product quality and outperform competitors.⁵²

Lastly, the merger of Dell and EMC was motivated by the need for innovative flexibility and financial investment in R&D. According to the company's industry study, it faces difficulties due to fierce competition, particularly from small businesses that focus on cloud computing and create significant disruptions because they quickly develop solutions and technology that have an impact on profitability. The Dell/EMC has remained agile and responsive to market demands, maintaining a higher competitive advantage. Overall, the acquisition was a game-changer for Dell, and it has allowed the company to remain competitive in the ever-changing technology industry.

3.5.4. How was the deal financed?

Dell announced the EMC acquisition in October 2015 in a cash/tracking stock deal valued at approx. \$67bn. Dell's ability to successfully close a \$67 billion deal was a result of numerous sources of financing. At the time of the transaction's completion on September 7, 2016, EMC shareholders received cash payments of \$24.05 per share in addition to tracking stock tied to a piece of EMC's economic stake in the VMware business. Shareholders of EMC got 0.11146 shares of new tracking stock (NYSE: DVMT) for each share they owned, based on the expected number of EMC shares outstanding at closure, valued \$9.05 per share.⁵³

Dell funded the acquisition with a combination of IG secured debt, term loans and HY unsecured debt.⁵⁴ Dell Technologies used debt financing agreements with an aggregate principal amount of approximately \$45.9 billion, equity financing agreements with a principal amount of approximately \$4.4 billion, and cash on hand of approximately \$7.8 billion to finance the EMC merger transaction, the repayment of the prior debt of EMC and Dell outstanding as of the closing of the EMC merger transaction, and the payment of related fees and expenses.⁵⁵

⁵² IvyPanda. (2022, June 26). Dell & EMC Corporation Merger and Acquisition. <https://ivypanda.com/essays/dell-amp-emc-corporation-merger-and-acquisition/>

⁵³ Historic dell and EMC merger complete forms world's largest privately controlled tech company. (n.d.). Dell.com, from <https://www.dell.com/en-us/dt/corporate/newsroom/announcements/2016/09/20160907-01.htm>

⁵⁴ Jp-Morgan-the-M&a-Wave-Risk-and-Reward.Pdf, from <http://jp-morgan-the-m&a-wave-risk-and-reward.pdf>

⁵⁵ Kumar, B.R. (2019). Dell's Acquisition of EMC. In: Wealth Creation in the World's Largest Mergers and Acquisitions. Management for Professionals. Springer, Cham. https://doi.org/10.1007/978-3-030-02363-8_20

Dell paid NTT Data Corp. of Japan \$3 billion for selling its IT services segment. Additionally, they raised \$112 million by selling 8 million shares of SecureWorks, a Dell subsidiary, at a price of \$14 each. Then, Dell revealed its intention to sell unsecured high yield "junk" bonds for close to \$9 billion. Dell raised money for the transaction by selling \$20 billion in secured bonds. At the end of the day, EMC stockholders received \$24.05 in cash per share.

In addition, Dell created a special strategy to take on VMWare. EMC owned 81% of VMWare at the time of the agreement, which amounted to 343 million shares. 120 million VMW shares, or 28% of the company, would remain in Dell's possession when the transaction was completed, and Dell would still have 97% of the voting rights in VMware. 223 million additional shares would thereafter be changed to tracking stock. These shares, which represent a 53% ownership holding in the business, would be distributed to EMC stockholders as part of the acquisition of EMC. The major justification for utilizing it in this situation is that by maintaining VMWare's pre-merger structure, Dell and former EMC stockholders will continue to profit from its future success.⁵⁶

Dell Inc. (Denali) has a debt commitment letter from Credit Suisse AG, Cayman Islands Branch, and Credit Suisse Securities (USA) LLC, JPMorgan Chase Bank, N.A., J.P. Morgan Securities LLC, Bank of America, N.A., Merrill Lynch, Pierce, Fenner & Smith Incorporated, Barclays Bank PLC, Citigroup Global Markets Inc., Citibank, N.A., Citicorp USA, Inc., Citicorp North America, Goldman Sachs Bank USA, Goldman Sachs Lending Partners LLC, Deutsche Bank AG New York Branch, Deutsche Bank AG Cayman Islands Branch, Deutsche Bank Securities Inc., Royal Bank of Canada and RBC Capital Markets, collectively referred to as the lenders, to provide, separately but not jointly, on the terms and subject to the conditions set forth in the debt commitment letter, in the aggregate up to \$49.5 billion in debt financing, consisting of term loan facilities, credit facilities, and corporate bridge facilities.

The debt financing's proceeds will be used to fund, in part, the payment of the sums due under the merger agreement, the refinancing of some of the outstanding debt of Dell International and EMC as of the merger's closing, the payment of associated fees and expenses, to provide ongoing working capital, and for other general corporate purposes of Dell and its subsidiaries, including EMC.

Additionally, the holders of common stock have committed to lending Denali up to \$4.25 billion in total in equity financing. Dell used its own cash reserves and equity investments from its founder, Michael Dell, and investment firm Silver Lake Partners. Michael Dell contributed a significant amount of personal funds, and Silver Lake Partners also provided a substantial equity investment. Lastly, at the time of the merger's

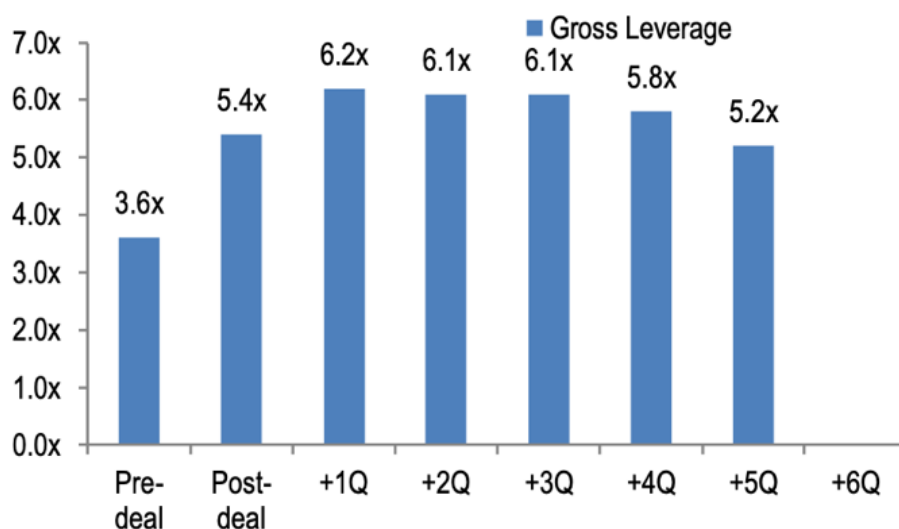
⁵⁶ Meddaugh, C. (2017). An event study analysis of the Dell-EMC merger. Clemson.edu, from https://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=3756&context=all_theses

conclusion, Denali and EMC have each committed to making a specific amount of cash available (at least \$2.95 billion in the case of Denali and \$4.75 billion in the case of EMC) in order to finance the transactions outlined in the merger agreement.⁵⁷

3.5.5. Financial risk associated with the transaction

Despite Dell becoming more strategically comprehensive, leverage (measured as total debt held by Dell Inc. excluding structured debt) dramatically increased from 3.6x prior to the deal to 5.4x following it. Initially, it was expected that Dell would quickly reduce its debt load through asset sales, high cash flow, and significant expense reduction, with the aim of converting to an IG company in two years. Nevertheless, throughout fiscal 2017, Dell (post-merger) started to experience a market environment marked by secular deterioration in both its PC and storage businesses in addition to severe component cost headwinds, which hindered cash flow generation and deleveraging efforts. Leverage stayed at 6x as Dell worked to repair the situation of its storage division, which began to show progress in F4Q18 when management changes assisted in the beginning of a turnaround in the company. The growth of cash flow and EBITDA was aided by the storage industry's increased profitability, and leverage has since decreased to around 5.2x.⁵⁸

Exhibit 3: Gross Leverage trend



Source: J.P. Morgan, Capital I.Q., Moody's, S&P and Fitch

Dell had approximately \$14.8 billion in outstanding long-term debt principal, including current maturities, as of July 31, 2015. Dell has had a sizable amount of debt after the deal was completed, necessitating hefty interest payments. Dell and its subsidiaries had approximately \$59.4 billion in short- and long-term debt as of December 1, 2015, and estimated cash interest for the twelve months ended December 1, 2015 was

⁵⁷ Sec.gov. EMC Merger Proxy, from

<https://www.sec.gov/Archives/edgar/data/790070/000119312515402152/d59207dprem14a.htm#toc>

⁵⁸ Jp-Morgan-the-M&a-Wave-Risk-and-Reward.Pdf, from <http://jp-morgan-the-m&a-wave-risk-and-reward.pdf>

approximately \$2.6 billion. This is after giving effect to the transactions envisioned by the merger agreement on a pro forma basis. On that date, Dell and its subsidiaries also had an additional \$2.35 billion in borrowing capacity under their senior secured revolving credit facility and their existing asset-backed securities facility.

The significant level of debt held by Dell could have had several negative effects, such as the following:

- Use of a sizable portion of Dell's operating cash flow to settle debts, including its recently issued senior credit facilities, senior secured notes, and senior unsecured notes, reducing the amount of money available for working capital, capital investments, other general corporate purposes, and potential acquisitions;
- The capacity of Dell to restructure such debt or to secure further funding for working capital, capital expenditures, acquisitions, or general corporate reasons may be compromised;
- Exposure to interest rate changes due to the variable interest rates on Dell's new senior credit facilities;
- More leverage than some of Dell's rivals, which could have given it a competitive disadvantage and limited its ability to react swiftly to shifting conditions in the financial and industrial markets; and
- Failure to adhere to the financial and other restrictive covenants in Dell's new senior credit facilities, the notes, and other indebtedness could have resulted in an event of default that, if not remedied or waived, could have negatively impacted Dell's business and prospects and forced us into bankruptcy or liquidation.

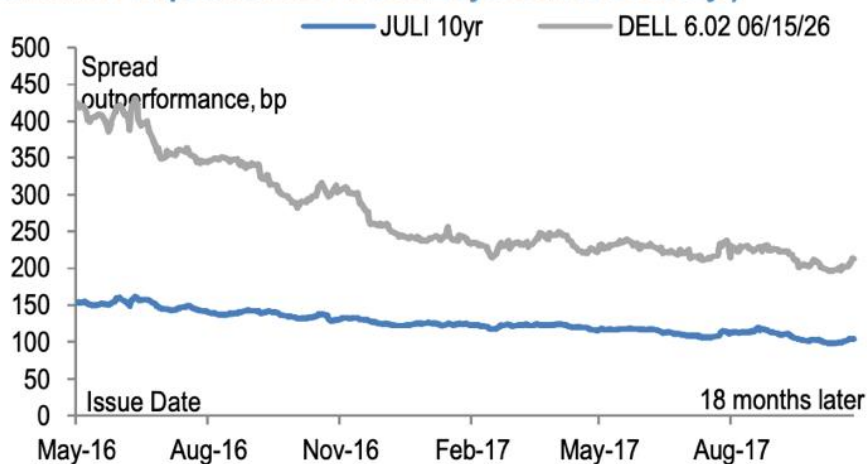
If new indebtedness was added to Dell's and its subsidiaries' debt levels as of the closing of the merger, the related risks could have intensified. Dell's possibility to access additional funding under Dell's new revolving credit facility and the existing ABS facility would have depended also upon the absence of a default under such facility, including any default arising from a failure to comply with the related covenants. If Dell was to be unable to comply with its covenants under its new revolving credit facility or the existing ABS facility, Dell's liquidity may have been adversely affected.

Among other things, Dell's operating performance, competitive developments, and financial market conditions—all of which are significantly influenced by financial, business, economic, and other factors—determine Dell's ability to cover expenses, maintain compliance with its covenants under its debt instruments, and make future principal and interest payments in respect of its debt.⁵⁹

⁵⁹ Sec.gov. EMC Merger Proxy, from <https://www.sec.gov/Archives/edgar/data/790070/000119312515402152/d59207dprem14a.htm#toc>

From a bonds' investor perspective, buying the IG bonds issued to fund the M&A deals has been a very good investment. Investors in Dell's M&A bonds did very well with 159bp⁶⁰ of outperformance.⁶¹

Exhibit 1: 10 yr M&A funding deal bond vs JULI 10yr (Larger number indicates outperformance of M&A 10yr bond vs JULI 10yr)



Source: J.P. Morgan, Capital I.Q., Moody's, S&P and Fitch

3.5.6. The deal's outcome

Dell Technologies has achieved both success and limitations since its creation. The consolidation allowed Dell to acquire essential intellectual property elements, such as virtualization and cloud software, needed to sustain its products and increase its strength in the PC market, and create a robust solutions portfolio for clients increasing the market share, leading to near-monopoly power in the development of storage devices.

The success of the merger is reflected in the rise of profits and stock prices, as well as the development of product brands with relative reliability and similar characteristics, increasing their competitive advantage (Dell Technologies, 2020). Furthermore, the consolidation has enabled Dell to provide IT infrastructure to General Electric. Dell's leadership on the internet of things brings insights to client computing models and is a crucial driver for current and future data center requirements.

However, the merger also presented risks associated with economies of scale and synergies (Meddaugh, 2017), which could lead to problems in product integration. The merger forced the two companies to indulge in debts exposing Dell to interest rates that reduce profitability. Consolidating organizations face difficulties incorporating different cultures and creative incentives to maintain critical stakeholders, as seen in EMC's initial indebted situation for long-term and short-term bases. Moreover, Dell has not successfully leveraged EMC's sales force.

⁶⁰ Bp refers to spread outperformance, where the spread looks at the increase or decrease in relative value between the M&A funding deal bond before and after the transaction.

⁶¹ Jp-Morgan-the-M&a-Wave-Risk-and-Reward.Pdf, from <http://jp-morgan-the-m&a-wave-risk-and-reward.pdf>

Following a three percent decline in sales in the second fiscal quarter, the regular reviews of Dell Technologies' organizational structures resulted in layoffs, indicating that there were some issues with the M&A.⁶²

An analysis of Dell Technologies' operating segments reveals that consolidation has been successful despite the few challenges discussed. Dell's client solutions group has earned more than 11 billion dollars in the fourth quarter of 2020 due to increased consumer and commercial revenue. The company's operating income was close to \$600 million, while the whole year earned \$45.8 billion in client solutions. Furthermore, the merger has acquired a better PC unit share for the last seven years and received substantial revenue growth in commercial workstations and desktops.⁶³

TABLE 3.11: Dell & EMC performance metrics

Metrics	Pre	E	Post	Insights
Revenues (€B)	79.9	90	94.4	In 2018 the Revenues Change was huge, set at +14% and the success was confirmed by important commissions, such as being the primary General Motors' IT infrastructure supplier.
EBIT Margin	8.6%		11.4%	Cost synergies could be depicted looking at COGS Margin, decreased from 69% to 66.8%
R&D Margin	5.5%		5.6%	The company mainly committed in high innovation projects, keeping always high the level of R&D Margin. Indeed, in 2020 Dell only accounted for almost 2800 patents released(+13% of 2019), ranking 12th in the world.
Net Income (€B)	3.66		6.13	The Net Income Margin itself went from 4.58% to 6.50%
EBITDA/T.Ass.	9.0%		13.1%	
ROE	(53.46%)		55.75%	
ROA	(2.50%)		2.89%	
EPS (€/s)	-	3.7	4.7	
Market Cap (€B)	33.71		54.88	After the merger, Dell Technologies became world's number one seller of storage systems, number two market position with respect to servers and number three position with respect to PCs.

3.6. Microsoft acquisition of LinkedIn

3.6.1. Microsoft background

Microsoft Corporation is a technology company established in 1975. It is a multinational corporation with locations across the globe. Millions of people all over the world benefit from the software products, services, and devices that Microsoft produces, licenses, and maintains. Microsoft's objective is to create world-class platforms and productivity lines for a cloud that is intelligent and filled with artificial intelligence. Operating systems, server applications, business solution applications, desktop and server management tools, software development tools, video games, and training and certification for computer system integrators and

⁶² Calcagno, R., & Sebastiano, M. (2020). Mergers and Acquisitions: expected vs actual performance. A set of case study assessments. Polito.It. <https://webthesis.biblio.polito.it/21382/1/tesi.pdf>

⁶³ IvyPanda. (2022, June 26). Dell & EMC Corporation Merger and Acquisition. <https://ivy panda.com/essays/dell-amp-emc-corporation-merger-and-acquisition/>

developers are among the products provided by Microsoft. Microsoft also creates, produces, and markets gadgets like PCs, tablets, gaming consoles, and entertainment systems. Microsoft provides a wide range of services, including cloud-based options that give users access to software, platforms, services, and content.⁶⁴ Microsoft also serves appropriate web advertising to a large worldwide audience.

Microsoft operate its business using three segments: Productivity and Business Processes, Intelligent Cloud, and More Personal Computing. Microsoft's offerings include cloud-based services, online advertising, and operating systems for computers, servers, and mobile devices under the "Windows" brand, as well as productivity software that works across platforms under the "Office" brand. Microsoft also offers additional software options, such as customer relationship management (marketed under the name "Dynamics"), a category of software used by companies to coordinate their efforts in marketing, sales, and customer service.⁶⁵

The largest software maker in the world by revenue as of 2022 was Microsoft, which was placed No. 14 on the Fortune 500 list of the biggest American firms.⁶⁶ Along with Alphabet (the parent company of Google), Amazon, Apple, and Meta (previously Facebook), it is regarded as one of the Big Five American technological corporations.

The NASDAQ shares Market lists Microsoft's common shares under the ticker "MSFT."⁶⁷

Microsoft received a AAA rating from Standard & Poor's and Moody's Investors Service since having assets worth \$41 billion and only \$8.5 billion in unsecured debt. As a result, Microsoft issued a \$2.25 billion corporate bond in February 2011 with relatively cheap borrowing rates compared to government bonds.⁶⁸

3.6.2. LinkedIn background

LinkedIn is a leader in the Professional Services Networks (PSN). It is a web-based platform and mobile app for social media that focuses on business and employment. It launched on May 5, 2003. The website enables both businesses and job seekers to advertise positions and is mostly used for professional networking and career advancement. It has been a fully owned subsidiary of Microsoft since December 2016.

⁶⁴ Kumar, B. R., & Kumar, B. R. (2019). Microsoft's Acquisition of LinkedIn. *Wealth Creation in the World's Largest Mergers and Acquisitions: Integrated Case Studies*, 235-241.

⁶⁵ Press corner. (n.d.). European Commission - European Commission, from https://ec.europa.eu/commission/presscorner/detail/en/IP_16_4284

⁶⁶ Fortune 500. (2022, May 23). *Fortune*. <https://fortune.com/ranking/fortune500/2022/search/>

⁶⁷ Sec.gov. LinkedIn Merger Proxy from https://www.sec.gov/Archives/edgar/data/1271024/000110465916130837/a16-14187_1prem14a.htm

⁶⁸ Sifert, T., & Rigby, B. (2011, February 4). Microsoft sells \$2.25 billion of debt at low rates. *Reuters*. <https://www.reuters.com/article/us-microsoft-bonds-idUSTRE7128EZ20110204>

With 33 offices worldwide, LinkedIn has its present headquarters in Sunnyvale, California, having been established in Mountain View, California. The business employed about 20,500 people as of May 2020.⁶⁹

For the most part, the Company offers its members all of its products free of charge. About three product lines are available: Talent Solutions, which covers Hiring, Learning and Development, and Premium Subscriptions; Marketing Solutions; and Talent Solutions. Its products are offered primarily through two channels: an offline field sales organization that works with both large and small business customers, and an online self-serve channel that sells memberships to both businesses and individual members. Its solutions come in both free and paid varieties. Stay Connected and Informed, as well as Advance My Career, are among its Free Solutions. The business's monetized solutions include marketing solutions, premium subscriptions, and talent solutions, which comprise hiring, learning, and development.⁷⁰

LinkedIn provides "Sales Navigator," a sales intelligence tool for enterprises, as one of its premium memberships. Businesses that also purchase customer relationship management systems can acquire this product, which gives access to a portion of the total LinkedIn database. Along with offering advertising space to people and businesses, LinkedIn also offers online education courses and recruiting tools.⁷¹

As of 2022, LinkedIn has more than 930 million users in more than 200 countries and territories⁷², making it the biggest professional network on the internet. The platform is used by members to keep informed and engaged, progress their careers, and work more efficiently.

The New York Stock Exchange lists LinkedIn's Class A common stock under the ticker symbol "LNKD."⁷³

3.6.3. An overview of the deal

Microsoft Corp. (Nasdaq: MSFT) announced its acquisition of LinkedIn Corporation (NYSE: LNKD) on June 13, 2016. On December 8, 2016, the deal was finalized for a cash price of \$26.2 billion⁷⁴, inclusive of LinkedIn's net cash. Investors in LinkedIn will receive payouts. Each stakeholder will receive \$196 in this transaction. The Friday before the Monday announcement, shares ended at \$131.08 a share. The \$196 is a purchasing premium of 49.5%.

Timing	
Date announced:	Jun 13 th , 2016
Date funded:	Aug 1 st , 2016
Date closed:	Dec 8 th , 2016
Sizing	
Deal size:	\$26.2bn
IG bond issuance:	\$19.8bn

⁶⁹ LinkedIn.com, from https://www.linkedin.com/company/linkedin/?src=li-other&veh=www.linkedin.com%7Ccre-other&trk=homepage-basic_directory_aboutUrl

⁷⁰ Refinitiv.com, from <https://workspace.refinitiv.com/web/Apps/Corp/?s=MSFT.O&st=RIC#/Summary>

⁷¹ Press corner. (n.d.). European Commission - European Commission, from https://ec.europa.eu/commission/presscorner/detail/en/IP_16_4284

⁷² About LinkedIn. (n.d.). LinkedIn.com, from <https://about.linkedin.com/>

⁷³ Sec.gov. LinkedIn Merger Proxy from https://www.sec.gov/Archives/edgar/data/1271024/000110465916130837/a16-14187_1prem14a.htm

⁷⁴ Microsoft 2017 annual report, p.7.

LinkedIn will continue to be independent and maintain its distinctive brand. According to Satya Nadella, the CEO of Microsoft, Jeff Weiner will continue to lead LinkedIn as its CEO. Weiner and LinkedIn's cofounder and chairman of the board, Reid Hoffman, support this transaction wholeheartedly.⁷⁵

With the exception of a few minor overlaps in online advertising, Microsoft and LinkedIn primarily operate in complimentary economic sectors.

After a period of uncontested global dominance in the PC hardware and software sector, Microsoft came under growing pressure from rivals around 2010. Following this rise, Microsoft has started a new strategic alignment. Microsoft has a long history of M&A deals with more than 230 acquisitions.

The agreement demonstrated Nadella's explicit intention to alter the direction of the Microsoft's growth strategy (Calcagno and Sebastiano, 2020), forsaking the mobile phone market in favor of the company's core business productivity division and the related goods and services it provides to the market.

This acquisition marked Microsoft's entry into the realm of social networking and professional connections. The primary predicted synergy was between LinkedIn data and Microsoft software, gaining traction in the digital lives of customers who regularly utilized the products of both businesses.

The opportunity to integrate private data (Outlook/Exchange/Office 365) and public profiles (LinkedIn) into a large stream of data that Microsoft would now hold was the main selling point for acquiring LinkedIn. The data would be utilized to enhance the relevance and personalization of its offerings.

By combining LinkedIn Sales Manager, a cutting-edge sales tool that helps sales teams develop and nurture customer relationships on the network, with Microsoft's Dynamics Cloud business, which combines CRM and ERP with productivity apps and artificial intelligence tools, Microsoft was able to enter and compete in the lucrative client relationship market.⁷⁶

The goal was to provide users with seamless access to professional networks, insights, and relevant information within their work environments. The integration aimed to enhance productivity, collaboration, and enable users to leverage their professional networks more effectively.

The millions members of LinkedIn expanded Microsoft's market and help the company make the move from a desktop software company to a provider of cloud computing services for businesses. It only takes one click to access LinkedIn using any of the Microsoft services.

By combining these capabilities, Microsoft aimed to provide a more comprehensive set of tools and services for professionals, recruiters, and businesses.

⁷⁵ Microsoft News Center. (2016, June 13). Microsoft to acquire LinkedIn. Stories. <https://news.microsoft.com/2016/06/13/microsoft-to-acquire-linkedin/>

⁷⁶ Greul, N., & Widdig, T. (2019). Deal Logic LinkedIn/Microsoft.

The transaction will hasten the expansion of LinkedIn's main operations. LinkedIn may enhance sales of its "Sales Navigator" service and advertising products by leveraging Microsoft's network of billions of users to attract new corporate solution clients, paid premium subscription members, and paid premium subscribers. Additionally, a portion of Microsoft's might possibly lower LinkedIn's overall marketing expenses.⁷⁷ Given the dearth of strong competitors in the networking industry, LinkedIn is an asset that has been challenging to replace. Even though it was initially a negative on corporate margins, LinkedIn is ramping up in FY2018 with rapid revenue growth amidst strong (and widespread) sales performance and is already accretive to EPS before initial forecasts.⁷⁸

The Microsoft-LinkedIn acquisition represented a convergence of technology, data, and professional networking. It aimed to create synergies between Microsoft's technology platforms and LinkedIn's professional ecosystem, with the goal of empowering individuals and organizations to achieve more in their professional lives.

3.6.4. How was the deal financed?

In a legally binding agreement, LinkedIn and Microsoft Corp. agreed that Microsoft will buy LinkedIn for \$196 per share in an all-cash deal worth \$26.2 billion. Microsoft acquired LinkedIn for \$196 per share in cash, a 50% premium over the company's closing price just prior to the announcement. This came out to be a \$9 billion premium above LinkedIn's market valuation.

Each outstanding share of Class A and Class B common stock (also known as "common stock") will automatically be converted into the right to receive the per-share merger consideration (currently \$196.00 per share, without interest and subject to applicable withholding taxes) at the time of the merger.⁷⁹

Microsoft principally used the issue of new debt to fund the purchase. Microsoft anticipates that after the transaction, LinkedIn's financial results will be included in Microsoft's Productivity and Business Processes segment. Microsoft expects the acquisition to become accretive to non-GAAP earnings per share in fiscal year 2019 or less than two years after closing.⁸⁰ Microsoft reaffirmed its aim to exhaust its current \$40 billion share repurchase authorization by December 31, 2016.⁸¹

⁷⁷ Eizadirad, A. (1466080423000). Here is everything you need to know about the Microsoft acquisition of LinkedIn. LinkedIn.com. <https://www.linkedin.com/pulse/here-everything-you-need-know-microsoft-acquisition-arsalan-eizadirad/>

⁷⁸ Jp-Morgan-the-M&a-Wave-Risk-and-Reward.Pdf, from <http://jp-morgan-the-m&a-wave-risk-and-reward.pdf>

⁷⁹ Sec.gov. LinkedIn Merger Proxy from https://www.sec.gov/Archives/edgar/data/1271024/000110465916130837/a16-14187_1prem14a.htm

⁸⁰ Non-GAAP includes stock-based compensation expense in accordance with Microsoft's reporting practices, but excludes expenses for integration and transactions as well as the anticipated effects of purchase accounting adjustments.

⁸¹ Microsoft News Center. (2016, June 13). Microsoft to acquire LinkedIn. Stories. <https://news.microsoft.com/2016/06/13/microsoft-to-acquire-linkedin/>

The financing methods used are:

- **Cash Reserves:** Microsoft utilized its substantial cash reserves to fund a significant portion of the acquisition. As a technology giant with a strong financial position, Microsoft had ample cash on hand to support the transaction. The use of cash provided immediate liquidity and allowed for a swift completion of the deal.
- **Debt Issuance:** To complement its cash reserves, Microsoft also issued new debt to finance the acquisition. In June 2016, Microsoft issued \$19.75 billion in senior unsecured notes, comprising various maturities (three to forty years) and interest rates. The debt issuance provided additional financial resources to support the cash component of the acquisition.

The debt issuance allowed Microsoft to take advantage of low interest rates prevailing in the market and tap into the debt markets to raise the necessary funds for the acquisition. The terms of the debt issuance, including interest rates and maturity dates, were determined based on market conditions and investor demand at the time. The debt was issued in a variety of forms, including bonds, notes, and loans. The interest rate on the debt was about 3.5%. This bond issuance represented the fifth biggest corporate bond sale on record in the United States.

The use of cash and debt financing allowed Microsoft to complete the acquisition of LinkedIn without diluting existing shareholders significantly. It also showcased Microsoft's financial strength and its ability to leverage its resources to pursue strategic acquisitions in the technology sector.

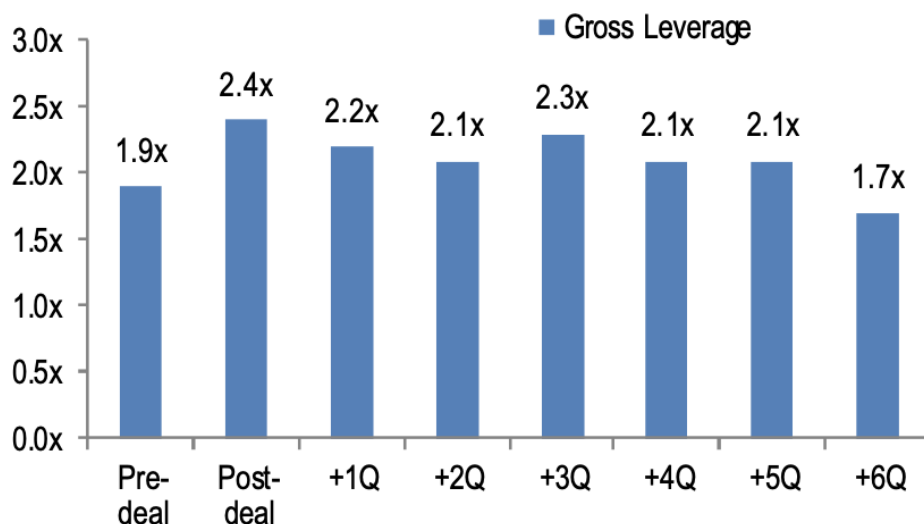
The transaction did not influence the company's credit rating by Standard & Poor, which confirmed its AAA level, despite being primarily supported by the issuance of additional debt. Expectations were high even though the LinkedIn's revenue share of Microsoft's overall business was fairly modest (almost 4%). Leverage post-close was just above 2x, but because of Microsoft's strong cash flow generation and EBITDA growth, it has been significantly reduced.⁸²

With about \$105 billion in cash and other liquid assets at their disposal, Microsoft's Net Financial Position was nevertheless impressive despite the debt that was used to take advantage of tax reductions (McBride, 2016).⁸³

⁸² Jp-Morgan-the-M&a-Wave-Risk-and-Reward.Pdf, from <http://jp-morgan-the-m&a-wave-risk-and-reward.pdf>

⁸³ Calcagno, R., & Sebastiano, M. (2020). Mergers and Acquisitions: expected vs actual performance. A set of case study assessments. Polito.It. <https://webthesis.biblio.polito.it/21382/1/tesi.pdf>

Exhibit 3: Gross Leverage trend



Source: J.P. Morgan, Capital I.Q., Moody's, S&P and Fitch

Why did Microsoft use fresh debt to finance this acquisition when it already had approximately 2.3 times the net cash available to cover the entire cost of the deal? A pre-closing net cash position of \$59 billion was declared by Redmond's giant, which was computed as the difference between the reported cash position of \$105 billion and a \$46 billion debt as of the end of March 2016.⁸⁴ This financial choice is tax-efficient and perfectly consistent with the accomplishment of three unstated but obvious goals.

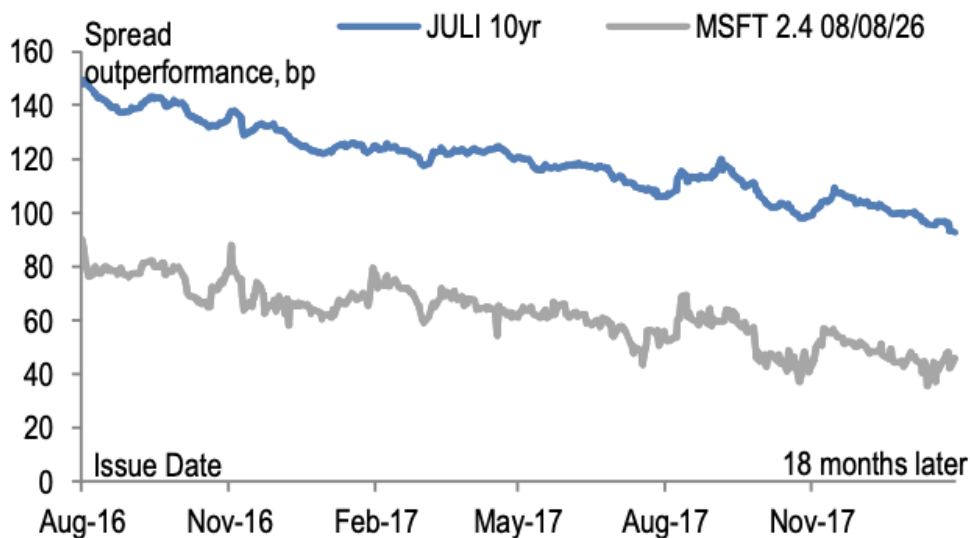
- Take advantage of historically low debt interest rates.
- Avoid paying an estimated 35% tax on the \$105 billion group's wealth that was repatriated from overseas accounts.
- Subtract tax from the cost of debt interest.

By issuing more debt, Microsoft's debt liabilities rose by 60%, increasing the proportion of debt to total capital from 10% at the end of 2015 to 15%. As a result, debt will become more significant and costlier in the Weighted Average Cost of Capital (WACC). Microsoft's cost of debt is much lower than its cost of equity because its bonds have a triple-A rating. From a bonds' investor perspective, issuing the IG bonds to fund the M&A deals has been a very good investment. Microsoft's cost of capital will consequently decrease by 40 basis points (bp).⁸⁵

⁸⁴ Tombereau, A. (1466072975000). 5 minutes to decipher ... the \$ 26.2 billion acquisition of LinkedIn by Microsoft. LinkedIn.com. <https://www.linkedin.com/pulse/5-minutes-decipher-262-billion-linkedin-acquisition-axel-tombereau/>

⁸⁵ Nasdaq.com, from <https://www.nasdaq.com/articles/how-linkedin-acquisition-through-debt-can-improve-microsofts-capital-structure-2016-06-15>

Exhibit 1: 10 yr M&A funding deal bond vs JULI 10yr (Larger number indicates outperformance of M&A 10yr bond vs JULI 10yr)



Source: J.P. Morgan, Capital I.Q., Moody's, S&P and Fitch

3.6.5. Financial risk associated with the transaction

For part of the deal, Microsoft issued a sizeable amount of debt. Due to greater interest costs and significant financial risk from debt servicing, this increased the firm's overall debt levels, which increased its debt-to-equity ratio from 0.3 to 0.5. This increase in debt could make it more difficult for Microsoft to borrow money in the future if it needs to make another acquisition or invest in new products and services. However, Microsoft's robust financial standing and capacity for generating cash flow provided a firm platform on which to manage the rising debt load.

The choice to predominantly finance the transaction with additional debt could result in considerable financial fallout and perhaps dissatisfy shareholders. In fact, in the worst case, the group's net cash position will drop from \$59 to about \$33 billion after the deal, but it seems that this is the price to pay to prevent significant tax inefficiencies. According to Moody's, Microsoft's gross debt will roughly be two times EBITDA post-closing, exceeding the 1.5 times leverage required to maintain Microsoft's exceptional and unusual AAA credit rating. By primarily using fresh debt to finance the transaction, Microsoft agrees to take the chance of a downgrading.⁸⁶

Microsoft was able to diversify its business and revenue streams thanks to the acquisition of LinkedIn. Through LinkedIn, Microsoft entered the social networking and business relationships area, reducing its

⁸⁶ Tombereau, A. 5 minutes to decipher ... the \$ 26.2 billion acquisition of LinkedIn by Microsoft. LinkedIn.com. <https://www.linkedin.com/pulse/5-minutes-decipher-262-billion-linkedin-acquisition-axel-tombereau/>

reliance on a single industry. By limiting exposure to certain market movements, this diversification can help reduce financial risk.

On the other hand, LinkedIn's business is cyclical, meaning that it is more sensitive to changes in the economy than Microsoft's other businesses. If the economy were to enter a recession, LinkedIn's revenue and profits could decline, which would hurt Microsoft's financial performance.

Moreover, the acquisition of LinkedIn increased Microsoft's exposure to risk from competition. LinkedIn is a competitive business, and Microsoft is now a major player in the market. This increased competition could make it more difficult for Microsoft to grow its business and generate profits.

Despite these risks, Microsoft believes that the acquisition of LinkedIn is a good long-term investment. The company expects to generate new revenue from LinkedIn's products and services, and it expects to save money on taxes by borrowing money. Microsoft's strong cash flow generation ability and diversified business portfolio decreased the acquisition's total financial risk.

3.6.6. The deal's outcome

After three years, there were indications that the risky decision had paid off (Erlichman, 2019).

Since the announcement of the deal, LinkedIn's user base had increased by almost 50%, from 433 million to over 645 million.

Additionally, revenue had been increasing. LinkedIn made \$6.8 billion in sales during 2019 fiscal year. That represents a 28% increase from the previous year.

A better product is the main reason why the results exceeded initial predictions. Whether it's due to the platform's content, messaging capabilities, or more pertinent connections to other professionals, people are spending more time on LinkedIn because it has a higher level of engagement. As users spend more time on LinkedIn, additional revenue-generating options are presented through increased advertising inventory, more subscriptions, and user data, all of which contribute to the enhancement of LinkedIn's recruiter offering.

Three years later, the deal's success has been attributed in large part to Microsoft's decision to let LinkedIn run essentially as an independent company. The state of the economy has also been crucial to LinkedIn's sustained expansion. Recruiters are continuously looking for qualified candidates as the unemployment rate in the United States is at its lowest point in 50 years.

Even though LinkedIn has profited from its independence, the two businesses have collaborated on a number of projects, including integrating LinkedIn into Outlook, strengthening the connection between LinkedIn Sales Navigator and Microsoft's Dynamics 365, and moving LinkedIn to Microsoft's Azure cloud.⁸⁷

Five years after Microsoft announced its intention to purchase LinkedIn for more than \$26 billion, the business social network has reached its first annual revenue milestone of \$10 billion.

As it was observed at the time, LinkedIn first experienced losses within Microsoft as a result of acquisition-related long-term expenditures. Before Microsoft stopped publishing LinkedIn's operating results, though, it appeared to be on a path toward profitability.⁸⁸

The acquisition of LinkedIn by Microsoft has proven to be a successful venture, with significant user base growth and increased revenue. The decision to let LinkedIn operate independently, along with a better product and favorable economic conditions, has contributed not only by boosting LinkedIn's financial performance but has also paving the way for future profitability within the Microsoft ecosystem.

TABLE 3.22: Microsoft & LinkedIn performance metrics

Metrics	Pre	E	Post	Insights
Revenues (€B)	94.10		155.55	The Microsoft Average Revenue Change was equal to 10.46%.
LinkedIn Rev (€B)	2.3		8.8	LinkedIn reached 690 million users in 2020 (starting from 450 M in 2016).
PBP sales		31.5	46.4	"Productivity and Business Processes" division, in which LinkedIn was incorporated. Between 2012 and 2015 the change was -1.82%, while among 2016-2020 about 104%.
EBIT Margin	30.86%		45.70%	LinkedIn became the second Leading Social media for B2B clients behind Facebook, and the shares of marketers using LinkedIn for marketing purposes in U.S. increased from 46.4% in 2017 to 49.6% in 2020.
R&D Margin	13.00%		13.44%	
Net Income (€B)	24.10		52.77	The importance of LinkedIn for Microsoft could be depicted also by the revenues Margin upon Microsoft ones, that went from 4% to 5.6% in 2020.
EBITDA/T.Ass.	18.38%		22.4%	
ROE	27.01%		40.14%	
ROA	11.16%		15.06%	
Market Cap (€B)	399.35		1540.77	

⁸⁷ Erlichman, J. (2019, October 23). Three years after Microsoft acquisition, LinkedIn keeps quietly climbing - BNN Bloomberg. BNN. <https://www.bnnbloomberg.ca/three-years-after-microsoft-acquisition-linkedin-keeps-quietly-climbing-1.1335990>

⁸⁸ Geekwire.com, from <https://www.geekwire.com/2021/linkedin-posts-first-10-billion-year-5-years-microsoft-deal-profits-remain-mystery/>

4. A COMPARATIVE ANALYSIS: DELL-EMC VS. MICROSOFT-LINKEDIN DEALS

4.1. Rationale for choosing the deals

The selection of the Dell-EMC and Microsoft-LinkedIn deals for comparative analysis stems from a deliberate and strategic rationale. Their significance lies in their overall interest and involvement of major players in the market. These high-profile acquisitions have garnered substantial attention of industry experts, investors, and the business community at large, making them compelling subjects of study.

Firstly, both acquisitions took place within the Technology, Media, and Telecommunications (TMT) industry, allowing for direct industry-level comparison. The involvement of influential market players underscores the strategic importance of these deals and their potential impact on the industry landscape. By focusing on the same industry, the findings of this analysis are relevant and applicable within the specific context of TMT, providing valuable insights for practitioners and scholars.

Furthermore, the Dell-EMC and Microsoft-LinkedIn deals share the same year of completion and are considered significant in terms of deal size, albeit with varying valuations, which enhances their comparability. Analyzing deals executed in the same year and of similar size facilitates a meaningful examination of the impact of M&A activity on financial risk, while mitigating potential confounding factors stemming from changes in market conditions or industry dynamics over time.

A notable difference of the deals lies in their financing methods. The Dell-EMC deal relied predominantly on a combination of debt and tracking stock, whereas the Microsoft-LinkedIn acquisition heavily utilized cash and debt issuance. This divergence in financing structures allows for an in-depth exploration of how different funding approaches influence the financial risk outcomes of M&A transactions. Examining these distinct financing methods provides insights into the nuanced impact of capital structure on the overall risk profile of the acquiring companies.

Considering these compelling factors—shared industry focus, common year of completion, significant deal size, and divergent financing methods—the Dell-EMC and Microsoft-LinkedIn deals emerge as ideal candidates for a comparative analysis. By studying these acquisitions, we can gain valuable insights into the effects of M&A activity and financing choices on financial risk outcomes, contributing to a deeper understanding of the dynamics and implications of such transactions in the field of finance.

4.2. Methodology and assumptions of the comparative analysis

The analysis of the Dell-EMC and Microsoft-LinkedIn deals was conducted employing a systematic methodology, which commenced with the collection of financial data from the income statements and balance sheets of the involved companies. The data was primarily sourced from SEC.gov forms. Specifically, financial data from Dell in 2015, EMC in 2015, Dell Technologies in 2019, Microsoft in 2015, LinkedIn in 2015, and Microsoft in 2019 were gathered.

To ensure comparability between the pre-deal and post-deal financial data, a pro-forma condensed combined statement of income and statement of financial position were created. This merging of the data from Dell in 2015 and EMC in 2015, as well as from Microsoft in 2015 and LinkedIn in 2015, was crucial to ensure data consistency and enable a meaningful comparison between the two acquisitions.

The analysis focused on key financial ratios that are known for their ability to provide insights into different aspects of financial performance. These ratios encompassed revenues, net income, return on equity (ROE), return on assets (ROA), EBITDA-to-assets ratio, debt-to-capital ratio, debt-to-equity ratio, interest coverage ratio, and current ratio. By calculating the percentage change between the 2015 and 2019 values of these ratios, significant information regarding the impact of the deals on profitability, leverage, and liquidity was derived.

The utilization of these financial ratios and the computation of their percentage changes facilitated a comprehensive assessment of the effects of the deals. It yielded valuable insights into how the acquisitions influenced the financial performance and risk profiles of the companies over the specified period.

However, it is important to acknowledge the underlying assumptions and limitations of the analysis. The assumption of merging pre-deal financial data assumes comparability between the financials of the respective companies, attributing any variations to the impact of the acquisitions. Additionally, relying on financial data reported by the companies themselves introduces potential biases or inaccuracies. These factors should be considered when interpreting the results of the analysis.

4.3. Rationale for Choosing a 3-Year Post-Deal Analysis in M&A Studies

In the realm of M&A studies, it is imperative to delve into the long-term implications of a deal, extending beyond the immediate aftermath. While examining the immediate post-deal period provides valuable insights, conducting a longer-term analysis spanning multiple years offers a more comprehensive understanding of the deal's effects on the involved companies.

Scholars have acknowledged the significance of undertaking a 3-year post-deal analysis to encompass the evolving dynamics and outcomes of M&A transactions. A notable study by Mitchell et al. (2004) underscores the importance of long-term analysis in evaluating the success and failure of M&A deals, emphasizing the need to assess performance over an extended duration to account for potential delays in achieving anticipated synergies and performance enhancements.

Moreover, empirical research conducted by Moeller et al. (2004) reinforces the notion that long-term analysis is indispensable in assessing the overall success of M&A deals. Their study reveals that financial performance measures often display fluctuating patterns in the years following an acquisition, implying that the full impact of the deal may require time to materialize. By incorporating a 3-year post-deal period, researchers can consider factors such as integration challenges, post-merger restructuring, and market fluctuations that may influence the financial performance and risk profile of the acquiring and target companies. Scholars such as Gomes et al. (2021) recommend a longer observation period to capture the effects of M&A on key financial metrics, encompassing profitability, leverage, and liquidity.

To conclude, by incorporating a 3-year post-deal analysis, the examination of the Dell-EMC and Microsoft-LinkedIn deals can encompass the evolving dynamics and outcomes, shedding light on their long-term effects on financial performance and risk.

4.4. Results of the deals

4.4.1. Differences in financing choices

The financing choices made for the Dell-EMC and Microsoft-LinkedIn deals exhibited contrasting characteristics in terms of funding sources and underlying motivations.

In the case of the Dell-EMC deal, Dell employed a combination of financing methods, including IG secured debt, term loans, and HY unsecured debt. Additionally, the company generated funds through asset sales and the issuance of secured bonds. This financing structure was carefully devised to cover the substantial acquisition cost of approximately \$67 billion. Dell's primary objectives were to secure the necessary funds, maintain financial stability, and minimize dilution to existing shareholders. The utilization of diverse debt instruments and cash reserves enabled Dell to efficiently finalize the deal, establishing itself as a prominent player in the technology industry.

Conversely, the financing approach for the Microsoft-LinkedIn deal relied predominantly on cash reserves and debt issuance. Microsoft possessed significant cash reserves, which it decided to utilize for financing a portion of the acquisition. Furthermore, the company issued \$19.75 billion in senior unsecured notes to augment its financial resources. Factors such as historically low interest rates, tax efficiency, and the opportunity to leverage Microsoft's triple-A credit rating influenced the decision to issue debt. By combining cash and debt financing, Microsoft aimed to successfully conclude the acquisition while preserving its financial strength and optimizing the cost of capital.

The divergence in IG (investment-grade) bond financing had multifaceted effects on the transactions. For the Dell-EMC deal, the use of IG bond financing facilitated a substantial infusion of capital, providing the necessary financial resources to finalize the acquisition. It showcased Dell's creditworthiness and financial robustness, instilling confidence in investors and stakeholders. On the other hand, although the Microsoft-LinkedIn deal was not heavily reliant on IG bonds, the financing choices highlighted Microsoft's ability to leverage its cash reserves and credit position in pursuing strategic acquisitions. By combining cash and debt financing, Microsoft effectively managed its capital structure while maintaining financial flexibility.

The disparities in financing choices reflect the unique circumstances and strategic objectives of each deal, taking into account the distinct characteristics and priorities of the involved companies. Dell focused on raising significant funds to support a transformative acquisition, whereas Microsoft aimed to leverage its existing resources and financial capabilities to pursue a strategic acquisition in a tax-efficient manner. Both companies sought to ensure the success of their respective acquisitions while considering their financial positions, market dynamics, and long-term growth strategies. Ultimately, both companies accomplished their deals successfully, positioning themselves for future growth and industry leadership.

4.4.2. Impact on profitability: revenues, net income, ROE, ROA

Debt levels and management exert a substantial influence on a company's profitability, as the allocation of funds to debt servicing restricts investment in growth and diminishes the net profit margin. Conversely, the utilization of debt amplifies a firm's expected return on equity (ROE).

Comparing the financial performance of two transactions, namely the Microsoft-LinkedIn and Dell-EMC deals, it becomes evident that Microsoft-LinkedIn demonstrated superior results in terms of revenue growth, net income expansion, and profitability metrics. While both deals exhibited enhancements in profitability, Microsoft-LinkedIn outperformed Dell-EMC due to several factors.

First and foremost, Microsoft-LinkedIn experienced a remarkable revenue growth of 30.31%, surpassing Dell-EMC's growth rate of 13.11%. This discrepancy indicates a stronger market position and heightened customer demand for Microsoft-LinkedIn. Consequently, the revenue growth translated into a substantial increase in net income for Microsoft-LinkedIn, achieving a growth rate of 226.23%, while Dell-EMC witnessed an increase in net income by 24.03%, though still having a negative value of \$ -2.818 millions.

Furthermore, Microsoft-LinkedIn showcased improved profitability metrics, exemplified by its higher return on equity (ROE) of 38.35% compared to Dell-EMC's 37.83%. The percentage change in ROE levels before and after the transactions was more pronounced for Dell, which heavily relied on debt financing.

Additionally, Microsoft-LinkedIn achieved a superior return on assets (ROA) of 13.69% in contrast to Dell-EMC's marginal increase of 0.03%. These metrics underscore Microsoft-LinkedIn's effective utilization of assets and its ability to generate greater profits per unit of investment.

In conclusion, Microsoft-LinkedIn's superior financial performance can be attributed to its more prudent approach to debt management, which has contributed to positioning the company as a financially robust and successful entity when compared to Dell-EMC. Despite the differing growth rates, both companies witnessed improved profitability and efficient utilization of shareholders' investments. Three years after the deals completion, the upward trajectory in profitability can be attributed to various factors, including the integration of the acquired businesses (such as the assimilation of LinkedIn's operations into Microsoft's ecosystem), the growth of the respective markets in which the companies operate (such as the expansion of the cloud computing market for Dell), and the increasing demand for the products and services offered by both companies.

4.4.3. Impact on leverage: debt-to-capital, debt-to-equity, interest coverage

In terms of risk management, Microsoft-LinkedIn exhibited a lower debt-to-capital ratio of 25.64% compared to Dell-EMC's higher ratio of 112.07%. A lower debt-to-capital ratio signifies a more conservative approach to leveraging debt and indicates reduced financial risk for the merged entity. This ratio is preferred as it suggests a higher proportion of equity financing relative to debt financing.

The post-deal data for Dell-EMC reveals a significant increase in the debt-to-capital ratio from 71.41% to 112.07%. This substantial rise indicates a higher level of debt in relation to the overall capital structure of the company following the merger.

Dell-EMC experienced a substantial negative shift in its debt-to-equity ratio, plummeting from 249.82% before the deal to -928.38% after the deal. This negative ratio implies that Dell-EMC had negative equity,

primarily as a result of the merger. In other words, the company's liabilities exceeded its assets. Such a situation is considered highly risky and may even incentivize seeking bankruptcy protection. Conversely, Microsoft-LinkedIn maintained a debt-to-equity ratio of 34.47%, which was significantly lower, indicating a more balanced and stable capital structure. This suggests the company's ability to fulfill its outstanding debt obligations.

Additionally, Dell's interest coverage ratio declined from -61.26% to -91.20%, indicating a decreased ability to cover interest expenses. Conversely, Microsoft's interest coverage ratio remained high and stable, experiencing a slight decline from 6,281.75% to 5,792.87%. This indicates a strong ability to cover interest expenses.

The Dell-EMC deal resulted in increased leverage for the merged company, leading to a higher debt burden and a negative equity situation. These factors signify a higher level of financial risk and potentially limited financial flexibility. In contrast, the Microsoft-LinkedIn deal had a more positive impact on leverage, resulting in a lower debt-to-capital ratio and a more balanced debt-to-equity ratio. This reflects a more prudent approach to managing leverage and indicates a lower level of financial risk for the merged entity.

4.4.4. Impact on liquidity: current ratio

The liquidity impact of the Dell-EMC and Microsoft-LinkedIn deals on the merging companies can be assessed by analyzing the provided data, with particular emphasis on the quick ratio.

In the case of Dell-EMC, the quick ratio witnessed a decline from 92.75% before the deal to 80.36% after the deal, indicating a decrease in liquidity. This reduction suggests that the merger may have strained the company's cash reserves, potentially affecting its ability to meet short-term obligations. The decrease in the quick ratio implies that Dell-EMC relied more on inventory or less liquid assets to fulfill its current liabilities following the merger.

Conversely, Microsoft-LinkedIn experienced a slight improvement in liquidity. The quick ratio increased from 249.30% pre-deal to 252.88% post-deal, indicating a higher level of liquidity. This suggests that the acquisition did not have a significant impact on Microsoft-LinkedIn's ability to meet its short-term obligations. The stable or improved quick ratio indicates that the company maintained or even enhanced its ability to convert its most liquid assets into cash to cover current liabilities.

4.4.5. Impact on financial risk

The Dell-EMC and Microsoft-LinkedIn deals had distinct effects on the financial risk profiles of the merging companies. The merger between Dell and EMC resulted in an increase in debt levels, leading to higher debt-to-capital and debt-to-equity ratios. This elevated the financial risk profile of the merged company, with potential implications such as increased interest payments, cash flow constraints, and limited financial flexibility. Conversely, the Microsoft-LinkedIn deal exhibited a more balanced approach to financing, with stable or decreasing debt-to-capital and debt-to-equity ratios. This strategic financing choice helped mitigate financial risks associated with excessive leverage, providing the merged company with greater stability and flexibility.

One of the key challenges for Dell in terms of financial risk was managing the debt burden and ensuring successful integration of the two companies. The success of the acquisition and Dell's ability to generate sufficient cash flows were crucial in mitigating the financial risks associated with the increased debt. On the other hand, Microsoft's robust cash flow generation capabilities and diversified business portfolio reduced the overall financial risk associated with the acquisition.

Therefore, when considering the overall impact on financial risk, it becomes evident that the ability to generate cash flow played a crucial role in the Dell-EMC and Microsoft-LinkedIn deals. Prudent management of the capital structure, as exemplified by the Microsoft-LinkedIn deal, can help mitigate financial risks, enhance financial stability, and provide flexibility for future growth. In contrast, an excessive reliance on debt financing, as observed in the Dell-EMC merger, amplifies financial risks and can limit the merged company's ability to effectively navigate challenges. These findings underscore the importance of carefully evaluating financing choices in mergers and acquisitions to achieve optimal financial risk management and long-term success.

4.5. Ultimate outcome

4.5.1. The deals outcomes

The merger between Dell and EMC has yielded both successes and limitations for Dell Technologies. The consolidation facilitated the acquisition of crucial intellectual property elements, bolstered the product portfolio, and resulted in increased market share, effectively establishing near-monopoly power in storage device development. The merger's triumph is further exemplified by the rise in profits, stock prices, and the success of product brands. Dell's provision of IT infrastructure to General Electric and its leadership in the internet of things have also contributed to its achievements. An analysis of Dell Technologies' operating

segments reveals successful consolidation within the client solutions group, which generated substantial revenue and operating income, along with significant market share gains in PCs, workstations, and desktops. These indicators point to an overall successful merger, despite encountering some obstacles. Ultimately, the merger led to the formation of Dell Technologies, a multinational technology conglomerate.

However, the merger also presented risks associated with economies of scale and product integration. Dell faced challenges concerning indebtedness and the integration of different cultures. Difficulties in achieving economies of scale were apparent through layoffs and a decline in sales, which indicated limitations in Dell's ability to support all employees and leverage EMC's sales force effectively.

On the other hand, Microsoft's acquisition of LinkedIn has proven to be a fruitful venture. Since the announcement of the deal, LinkedIn's user base has witnessed significant growth, accompanied by a 28% increase in revenue. The acquisition enabled Microsoft to enter the social networking and professional connections space, expanding its portfolio and reaching a broader user base. The improved product, heightened user engagement, and collaboration between LinkedIn and Microsoft have contributed to its success. The acquisition has strengthened Microsoft's position in the professional networking market and created new opportunities for cross-promotion and data-driven personalization. LinkedIn's independence, coupled with favorable economic conditions, has paved the way for future profitability within the Microsoft ecosystem.

Both acquisitions have had significant impacts on their respective companies. The EMC acquisition transformed Dell into a technology conglomerate with a comprehensive range of enterprise solutions. The LinkedIn acquisition expanded Microsoft's product ecosystem, enabling a deeper integration of professional networking capabilities into its existing offerings. These acquisitions have strategically positioned both Dell and Microsoft in their respective markets, allowing them to offer more comprehensive solutions to their customers.

4.5.2. The impact of financing on the deals outcome

The impact of financing choices on the outcome of the Dell-EMC and Microsoft-LinkedIn deals should not be underestimated. The decisions made regarding financing play a crucial role in shaping the overall success and risk profile of mergers and acquisitions. In the case of Dell-EMC, the merger involved a substantial exposure to debt, which had the potential to strain cash reserves and impede the merged company's ability to invest in growth initiatives.

The significant debt load undertaken to finance the deal placed considerable financial pressure on Dell in the years following the acquisition. This debt burden was one of the factors that led Dell to become a publicly traded company once again and take steps to address its debt problem. It may have also limited the company's capacity to make additional acquisitions or invest in research and development, which could have constrained its long-term growth prospects.

Likewise, in the Microsoft-LinkedIn deal, the financing choices made had implications for the outcome. Microsoft's acquisition of LinkedIn for over \$26 billion necessitated a substantial financial commitment. The chosen financing structure likely influenced the financial performance of LinkedIn within Microsoft. Initially, LinkedIn incurred losses due to acquisition-related long-term expenditures. However, Microsoft's decision to allow LinkedIn to operate independently enabled it to concentrate on enhancing its product and leveraging its user base, resulting in subsequent revenue growth and profitability. The financing strategy employed in the Microsoft-LinkedIn deal, which likely involved a combination of debt and utilization of existing cash reserves, provided a more sustainable foundation for the merged company's financial stability and growth prospects.

In the case of Microsoft's acquisition of LinkedIn, the use of investment-grade (IG) bond financing had a positive impact on the deal outcome. By securing IG bonds at favorable interest rates, Microsoft was able to minimize the cost of financing the acquisition. This, in turn, potentially improved the overall financial performance and profitability of the combined entity, leading to a successful outcome. Furthermore, Microsoft's strong creditworthiness and ability to issue IG bonds reduced the financial risk associated with the acquisition, providing greater financial stability and flexibility.

Hence, it is evident that the financing approach employed in an acquisition significantly influences the financial risk, flexibility, and resources available to the acquiring company. The financing choices made in these deals underscore the importance of carefully considering the balance between debt and equity financing. While debt financing provides immediate access to capital, it also increases financial risk and interest expenses, as observed in the Dell-EMC merger. On the other hand, as demonstrated by the Microsoft-LinkedIn deal, equity financing dilutes ownership but provides stability and flexibility in managing financial obligations.

A well-managed financing strategy, combined with effective integration and execution, is essential for maximizing the ultimate results of an acquisition.

4.6. Successful tech deals entail data management and cloud computing

The biggest technological acquisitions in recent years make it appear obvious that connection and data analytics, both enabled by cloud computing, have been the two key issues on which technology breakthroughs have been focused.

Indeed, the information technology industry is taking the lead as we recently entered a new transition period. Data management and control, and smart linked devices and apps will provide new information nodes to be used for improved analytics.

Targets with core competencies in the data management and control value chain are more likely to close deals in the technology sector because of their unique ability to capitalize on the inherent competitive advantage provided by data in an increasingly connected world.

Microsoft has been able to increase the productivity services provided by its traditional products (Office, etc.), as well as the market for "professional" data sold to recruiters and the social network itself, all thanks to the LinkedIn deal. It's interesting to note that, out of all the deals Microsoft has entered into, only the LinkedIn case appears to have been a stunning success for the company.

In contrast, the Dell example explores data from a different angle, namely the infrastructure service angle. It acknowledged the shift toward a linked digital world and has made an effort to establish itself as a key player for the cloud-computing supplier of storage infrastructures and systems. A market capitalization change of roughly + 63% and an EBITDA/assets ratio of +62% were both achieved thanks to the plan.

Today, data are any company's most important asset, provided that they can be rapidly turned into useful information. Because of this, businesses are spending more money on AI and machine learning so they can analyze vast amounts of data and draw conclusions from many invisible links. However, the identification of abnormalities and the defense against cyberattacks are equally important. In addition to this direct data analysis, it also incorporates the function of a contemporary multi-cloud IT infrastructure, which is essential to becoming a data-driven business and where value is offered by organizations like Dell Technologies.

5. CONCLUSION

5.1. Summary of key findings

In the realm of technology mergers and acquisitions, the Dell-EMC and Microsoft-LinkedIn deals have proven to be remarkable ventures, showcasing both successes and challenges. These transactions have not only shaped the companies involved but also provided valuable insights into the crucial role of financing strategies and the power of data management and cloud computing in the modern business landscape.

Both the Dell-EMC and Microsoft-LinkedIn transactions have had transformative effects on the acquiring companies, allowing them to offer more comprehensive and integrated solutions to their customers, thereby strengthening their competitive advantage. The key factors of synergy, market power, and diversification are among the real drivers for the M&A activity.

By considering these compelling factors—shared industry focus, common year of completion, significant deal size, and divergent financing methods—the Dell-EMC and Microsoft-LinkedIn deals emerge as ideal candidates for a comparative analysis. This deliberate selection aims to draw a conclusion on the intricacies of financial risk in the realm of M&A activity, particularly within the TMT industry. The findings derived from this study will contribute to the existing body of knowledge surrounding M&A transactions, while informing practitioners and stakeholders about the implications of such deals on financial risk management.

The merger between Dell and EMC transformed Dell Technologies into a multinational technology conglomerate, experiencing a surge in profits, stock prices, and the triumph of its product brands. The acquisition facilitated the integration of crucial intellectual property elements, bolstered the product portfolio, and established near-monopoly power in storage device development. Despite encountering obstacles, the merger laid the foundation for Dell Technologies' rise as a dominant player in the technology industry. However, the Dell-EMC merger also brought forth challenges, particularly in terms of indebtedness and cultural integration. Declining sales underscored the limitations in Dell's ability to leverage the full potential of EMC's sales force. These hurdles highlighted the delicate balance required for a successful merger.

In contrast, Microsoft's acquisition of LinkedIn proved to be a resounding success. LinkedIn experienced significant growth in its user base and a remarkable 28% increase in revenue following the deal. The acquisition enabled Microsoft to enter the competitive social networking and professional connections space, expanding its reach and portfolio. Collaborative efforts between LinkedIn and Microsoft enhanced the user experience and opened new avenues for cross-promotion and data-driven personalization. This strategic

move solidified Microsoft's position in the professional networking market and paved the way for future profitability.

The impact of financing choices on the outcomes of these deals is noteworthy. It has become evident that the selection between debt and equity financing plays a pivotal role in shaping the overall risk exposure of these firms. While debt financing can yield rapid growth and expansion opportunities, it inherently heightens financial risk by amplifying leverage and interest obligations. Dell's exposure to substantial debt following the merger strained its cash reserves, limiting its ability to invest in growth initiatives and potentially hindering long-term expansion. In contrast, Microsoft's financing strategy, involving a combination of debt and existing cash reserves, provided a more sustainable foundation for the merged entity's financial stability and growth prospects. Thus, careful consideration of financing methods is paramount when charting the course of M&A endeavors in the TMT sector.

Establishing the true impact of an M&A acquisition on a company's financial risk necessitates a comprehensive evaluation encompassing multifaceted factors. A meticulous analysis of the target company's financial statements before and after the M&A transaction unravels critical indicators, including changes in leverage, interest expense, profitability, and liquidity. By delving into these essential financial metrics, one can discern the precise impact of the acquisition on the target company's financial risk profile. This holistic assessment methodology empowers stakeholders to ascertain the true impact of an M&A transaction on a company's financial risk with a heightened level of accuracy.

In conclusion, the Dell-EMC and Microsoft-LinkedIn transactions have revealed critical insights into the intricacies of technology mergers and acquisitions. These findings emphasize the significance of successful consolidation, strategic financing decisions, and harnessing the potential of data management and cloud computing. As companies navigate the ever-evolving technological landscape, understanding these key principles will prove instrumental in maximizing the benefits of future transactions and driving sustainable growth in the dynamic world of finance and technology.

5.2. Significance of the Study

The present study holds significant value and relevance in the fields of corporate finance, mergers and acquisitions (M&A), and risk management, particularly within the dynamic context of the technology, media, and telecommunications (TMT) sector. The findings of this thesis have the potential to contribute to the existing body of knowledge and offer valuable insights for professionals and researchers in these domains.

Advancing Knowledge in Corporate Finance and M&A:

By providing real-world cases that shed light on the implications of financing choices and their subsequent effects on financial risk, the insights can expand our understanding of the factors influencing financial risk in the TMT sector and inform decision-making processes related to corporate finance and M&A strategies.

Enhancing Understanding of Risk Management in the TMT Sector:

This study's focus on financial risk in the TMT sector provides valuable insights into the sector-specific nature of risk management. This understanding can inform strategies to navigate the complex landscape of the TMT industry and drive sustainable growth and value creation.

Practical Implications for Professionals:

Professionals working in corporate finance, M&A, and risk management within the TMT sector can benefit from the findings of this study. The analysis of the EMC and LinkedIn acquisitions offers practical implications for professionals involved in M&A transactions, which can help professionals make informed decisions regarding financing methods, assess risk profiles, and optimize financial performance.

Additionally, the study's evaluation of various financial ratios provides professionals with practical tools to assess the impact of M&A on financial risk and guide their decision-making processes.

Guidance for Future Research:

The research conducted in this thesis opens avenues for further investigation into the relationship between financing choices, financial risk, and performance in the TMT sector. Researchers can build upon this study by exploring additional cases, considering different M&A financing scenarios, or examining the impact of other variables on financial risk. The comprehensive analysis of financial measures and the incorporation of relevant data sources provide a foundation for future research endeavors in this area.

6. APPENDIX – ORIGINAL EXCEL ANALYSIS

DELL - EMC

INDICATORS OF FINANCIAL RISK		INDICATORS OF FINANCIAL RISK		PERFORMANCE CHANGE	
	PRE DEAL (2015)		POST DEAL (2019)		2015-2019
REVENUES (\$ millions)	80.118	REVENUES (\$ millions)	90.621	REVENUES (\$ millions)	13,11%
NET INCOME (\$ millions)	(2.871)	NET INCOME (\$ millions)	(2.181)	NET INCOME (\$ millions)	24,03%
ROE	(12,06)%	ROE	37,83%	ROE	49,90%
ROA	(1,98)%	ROA	(1,95)%	ROA	0,03%
EBITDA/ASSETS	1,77%	EBITDA/ASSETS	6,76%	EBITDA/ASSETS	4,99%
DEBT-TO-CAPITAL	71,41%	DEBT-TO-CAPITAL	112,07%	DEBT-TO-CAPITAL	40,66%
DEBT-TO-EQUITY	249,82%	DEBT-TO-EQUITY	(928,38)%	DEBT-TO-EQUITY	(1178,20)%
INTEREST COVERAGE	(61,26)%	INTEREST COVERAGE	(91,20)%	INTEREST COVERAGE	(29,93)%
CURRENT RATIO	92,75%	CURRENT RATIO	80,36%	CURRENT RATIO	(12,40)%

MICROSOFT - LINKEDIN

INDICATORS OF FINANCIAL RISK		INDICATORS OF FINANCIAL RISK		PERFORMANCE CHANGE	
	PRE DEAL (2015)		POST DEAL (2019)		2015-2019
REVENUES (\$ millions)	96.571	REVENUES (\$ millions)	125.843	REVENUES (\$ millions)	30,31%
NET INCOME (\$ millions)	12.028	NET INCOME (\$ millions)	39.240	NET INCOME (\$ millions)	226,23%
ROE	14,23%	ROE	38,35%	ROE	24,12%
ROA	6,63%	ROA	13,69%	ROA	7,07%
EBITDA/ASSETS	10,34%	EBITDA/ASSETS	2,71%	EBITDA/ASSETS	(7,63)%
DEBT-TO-CAPITAL	28,63%	DEBT-TO-CAPITAL	25,64%	DEBT-TO-CAPITAL	(2,99)%
DEBT-TO-EQUITY	40,12%	DEBT-TO-EQUITY	34,47%	DEBT-TO-EQUITY	(5,64)%
INTEREST COVERAGE	6281,75%	INTEREST COVERAGE	5792,87%	INTEREST COVERAGE	(488,88)%
CURRENT RATIO	249,30%	CURRENT RATIO	252,88%	CURRENT RATIO	3,58%

DELL - EMC (2015)

DENALI UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF INCOME (LOSS)				
	Year Ended January 30, 2015			
	Denali Fiscal year ended January 30, 2015	EMC Fiscal year ended January 30, 2015	Pro forma adjustments	Pro forma combined
<i>(in \$ millions, except per share amounts)</i>				
Net revenue:				
Products	46.690	14.051	(414)	60.327
Services, including software related	11.429	10.389	(2.027)	19.791
Total net revenue	58.119	24.440	(2.441)	80.118
Cost of net revenue:				
Products	40.415	5.745	3.037	48.310
			(414)	—
			(473)	—
Services, including software related	7.496	3.504	—	11.000
Total cost of net revenue	47.911	9.249	2.150	59.310
Gross margin	10.208	15.191	(4.591)	20.808
Operating expenses:				
Selling, general, and administrative	9.428	8.096	288	17.812
Research, development, and engineering	1.202	3.058	(7)	4.253
Total operating expenses	10.630	11.154	281	22.065
Operating income (loss)	(422)	4.037	(4.872)	(1.257)
Interest and other, net	(924)	(275)	(2,046)	(3,317)
	—	—	(72)	—
Income (loss) before income taxes	(1,346)	3,762	(6,990)	(4,574)
Income tax provision (benefit)	(125)	868	(2,446)	(1,703)
Net income (loss)	(1,221)	2,894	(4,544)	(2,871)
Net income (loss) attributable to non-controlling interests	—	(180)	296	116
Net income attributable to common shareholders	(1,221)	2,714	(4,248)	(2,755)
DHI Group common stock:				
Earnings (loss) per share, basic	(3.02)			
Earnings (loss) per share, diluted	(3.02)			
Weighted average shares outstanding, basic	404		155	559
Weighted average shares outstanding, diluted	404		155	559
Net income (loss) attributable to DHI Group common stock	n/a			
Class V Common Stock:				
Earnings (loss) per share, basic	n/a			
Earnings (loss) per share, diluted	n/a			
Weighted average shares outstanding, basic	n/a		223	223
Weighted average shares outstanding, diluted	n/a		223	223
Net income (loss) attributable to Class V Common Stock	n/a			

DENALI UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF FINANCIAL POSITION

Year Ended July 31, 2015

	Denali Fiscal year ended July 31, 2015	EMC Fiscal year ended July 31, 2015	Pro forma adjustments	Pro forma combined
(in \$ millions)				
Current assets:				
Cash and cash equivalents	6.294	5.803	(4.705)	7.392
Short-term investments	0	1.939	(576)	1.363
Accounts receivable, net	6.096	3.345	0	9.441
Short-term financing receivables, net	2.973	0	0	2.973
Inventories, net	1.503	1.224	602	3.329
Other current assets	4.382	1.776	(30)	6.128
Total current assets	21.248	14.087	(4.709)	30.626
Property, plant, and equipment, net	2.406	3.788	0	6.194
Long-term investments	118	7.041	(3.199)	396
Long-term financing receivable, net	2.193	0	0	2.193
Goodwill	10.049	16.185	27.429	53.663
Purchased intangible assets, net	10.669	1.953	33.037	45.659
Other non-current assets	625	1.813	23	2.461
Total assets	47.308	44.867	52.581	144.756
Current liabilities:				
Short-term debt	3.543	1.948	(3.419)	2.072
Accounts payable	1.345	1.219	0	14.669
Accrued and Other	4.442	2.983	(224)	7.935
	0	0	734	0
Short-term deferred revenue	4.101	6.357	(2.115)	8.343
Total current liabilities	25.536	12.507	(5.024)	33.019
Long-term debt	11.026	5.472	40.884	57.382
Long-term deferred revenue	4.357	4.344	(1.352)	7.349
Other non-current liabilities	4.424	982	11.232	16.638
Total liabilities	45.343	23.305	4.574	114.388
Redeemable Shares	100	0	0	100
Stockholders' equity				
Preferred stock	-	-	-	-
Common stock and additional paid-in capital	5.697	19	22.465	28.181
Retained earnings (deficit)	(3.602)	20.516	(21.166)	(4.252)
Accumulated other comprehensive income (loss)	(230)	(458)	458	(230)
Total stockholders' equity	1.965	20.077	1.757	23.799
Non-controlling interests	0	1.485	5.084	6.569
Total liabilities and equity	47.308	44.867	52.581	144.756

COMBINED RESULTS OF OPERATIONS, CASH FLOW AND BALANCE SHEET DATA

	Fiscal year Ended January 30, 2015
(in \$ millions, except per share amounts)	
Net revenue	80.118
Gross margin	20.808
Operating income (loss)	(1.257)
Income (loss) before income taxes	(4.574)
Net income (loss)	(2.871)
DHI Group Common Stock:	
Earnings (loss) per share, basic	
Earnings (loss) per share, diluted	
Weighted average shares outstanding, basic	559
Weighted average shares outstanding, diluted	559
Net income (loss) attributable to DHI Group common stock	
Class V Common Stock:	
Earnings (loss) per share, basic	
Earnings (loss) per share, diluted	
Weighted average shares outstanding, basic	223
Weighted average shares outstanding, diluted	223
Net income (loss) attributable to Class V Common Stock	
EBITDA	2.555
Adjusted EBITDA	3.766
EBIT	1.988
INTEREST EXPENSES	(3.245)
Cash and cash equivalents	7.392
Total assets	144.756
Short-term debt	2.072
Long-term debt	57.382
Total stockholders' equity	23.799

DELL - EMC (2019)

DELL TECHNOLOGIES STATEMENT OF INCOME	
	Fiscal Year ended February 1, 2019
(in \$ millions, except per share amounts)	
Net revenue:	
Products	71.287
Services, including software related	19.334
Total net revenue	90.621
Cost of net revenue:	
Products	57.889
Services	7.679
Total cost of net revenue	65.568
Gross margin:	
Products	13.398
Services, including software related	11.655
Total gross margin	25.053
Operating expenses:	
Selling, general, and administrative	20.640
Research and development	4.604
Total operating expenses	25.244
Operating income (loss)	(191)
Interest and other, net	(2.170)
Income (loss) before income taxes	(2.361)
Income tax provision (benefit)	(180)
Net income (loss)	(2.181)
Net income (loss) attributable to non-controlling interests	129
DHI Group common stock:	
Earnings (loss) per share, basic	(6)
Earnings (loss) per share, diluted	(6)
Weighted average shares outstanding, basic	582
Weighted average shares outstanding, diluted	582
Net income (loss) attributable to DHI Group common stock	
Class V Common Stock:	
Earnings (loss) per share, basic	6
Earnings (loss) per share, diluted	6
Weighted average shares outstanding, basic	199
Weighted average shares outstanding, diluted	199
Net income (loss) attributable to Class V Common Stock	

DELL TECHNOLOGIES STATEMENT OF FINANCIAL POSITION

	Fiscal Year ended February 1, 2019
(in \$ millions)	
Current assets:	
Cash and cash equivalents	9.676
Short-term investments	-
Accounts receivable, net	12.371
Short-term financing receivables, net	4.398
Inventories, net	3.649
Other current assets	6.044
Total current assets	36.138
Property, plant, and equipment, net	5.259
Long-term investments	1.005
Long-term financing receivables, net	4.224
Goodwill	40.089
Intangible assets, net	22.270
Other non-current assets	2.835
Total assets	111.820
Current liabilities:	
Short-term debt	4.320
Accounts payable	19.213
Accrued and Other	8.495
Short-term deferred revenue	12.944
Total current liabilities	44.972
Long-term debt	49.201
Long-term deferred revenue	11.066
Other non-current liabilities	6.327
Total liabilities	111.566
Commitments and contingencies (Note 10)	
Redeemable shares (Note 17)	1.196
Stockholders' equity (deficit):	
Common stock and capital in excess of \$0.01 par value (Note 14)	16.114
Treasury stock at cost	(63)
Accumulated deficit	(21.349)
Accumulated Other comprehensive income (loss)	(467)
Total Dell Technologies Inc. stockholders' equity (deficit)	(5.765)
Non-controlling interests	4.823
Total stockholders equity (deficit)	(942)
Total liabilities, redeemable shares, and stockholders' equity (deficit)	111.820

COMBINED RESULTS OF OPERATIONS, CASH FLOW AND BALANCE SHEET DATA

	Fiscal year Ended February 1, 2019
(in \$ millions, except per share amounts)	
Net revenue	90.621
Gross margin	25.053
Operating income (loss)	(191)
Income (loss) before income taxes	(2.361)
Net income (loss)	(2.181)
DHI Group Common Stock:	
Continuing operations - basic	(6,02)
Continuing operations - diluted	(6,04)
Weighted average shares outstanding, basic	582
Weighted average shares outstanding, diluted	582
Net income (loss) attributable to DHI Group common stock	
Class V Common Stock:	
Continuing operations - basic	6,01
Continuing operations - diluted	5,91
Weighted average shares outstanding, basic	199
Weighted average shares outstanding, diluted	199
Net income (loss) attributable to Class V Common Stock	
EBITDA	7.555
Adjusted EBITDA	10.296
EBIT	1.979
INTEREST EXPENSES	(2.170)
Cash and cash equivalents	9.676
Total assets	111.820
Short-term debt	4.320
Long-term debt	49.201
Total stockholders' equity	(5.765)

MICROSOFT - LINKEDIN (2015)

MICROSOFT UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF INCOME (LOSS)			
Year Ended January 30, 2015			
(in \$ millions, except per share amounts)	Microsoft Fiscal year ended June 30, 2015	LinkedIn Fiscal year ended December 31, 2015	Pro forma combined
Net revenue:			
Products	75.956,0		75.956,0
Services, including software related	17.624,0		17.624,0
Total net revenue	93.580,0	2.990,9	96.570,9
Cost of net revenue:			
Products	21.410,0		21.410,0
Service and other	11.628,0		11.628,0
Total cost of net revenue	33.038,0	839,3	33.877,3
Gross margin	60.542,0	2.151,6	62.693,6
Operating expenses:			
General, and administrative	4.611,0	478,7	5.089,7
Research, development, and engineering	12.046,0	775,7	12.821,7
Sales and marketing	15.713,0	1.048,1	16.761,1
Depreciation and amortization		420,5	420,5
Impairment, integration, and restructuring	10.011,0		10.011,0
Total operating expenses		3.141,9	3.141,9
Operating income (loss)	18.161,0	(150,9)	18.010,1
Interest and other, net	346,0	(63,8)	282,2
Income (loss) before income taxes	18.507,0	(214,7)	18.292,3
Income tax provision (benefit)	6.314,0	(50,0)	6.264,0
Net income (loss)	12.193,0	(164,8)	12.028,2
Earnings per share:			
Basic	1,5	(1,3)	0,2
Diluted	1,5	(1,3)	0,2
Weighted average shares outstanding:			
Basic	8.177,0	129,0	8.306,0
Diluted	8.254,0	129,0	8.383,0
EBITDA	17.978,0	779,8	18.757,8

MICROSOFT UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF FINANCIAL POSITION

Year Ended July 31, 2015

(in \$ millions)	Microsoft Fiscal year ended June 30, 2015	LinkedIn Fiscal year ended December 31, 2015	Pro forma combined
Current assets:			
Cash and cash equivalents	5,595	546	6,141
Short-term investments (including securities loaned of \$204 and \$75)	90,931	2,573	93,504
Total cash, cash equivalents, and short-term investments	96,526	3,119	99,645
Accounts receivable, net of allowance for doubtful accounts of \$426 and \$335	17,908	603	18,511
Inventories	2,902	151	3,053
Other	5,461	62	5,523
Total current assets	122,797	3,935	126,732
Property and equipment, net of accumulated depreciation	14,731	1,047	15,778
Equity and other investments	12,053		12,053
Goodwill	16,939	1,507	18,446
Intangible assets, net	4,835	373	5,208
Other long-term assets	3,117	149	3,266
Total assets	174,472	7,011	181,483
Current liabilities:			
Accounts payable	6,591	162	6,753
Short-term debt	4,985		4,985
Current portion of long-term debt	2,499		2,499
Accrued compensation	5,096	317	5,413
Income taxes	606	709	1,315
Short-term unearned revenue	23,223		23,223
Securities lending payable	92		92
Other	6,555		6,555
Total current liabilities	49,647	1,188	50,835
Long-term debt	27,808	112,654	289,345
Long-term unearned revenue	2,095		2,095
Deferred income taxes	1,295		1,295
Other long-term liabilities	13,544	201	13,745
Total liabilities	94,389	2,544	96,933
Commitments and contingencies			
Stockholders' equity:			
Common stock and paid-in capital	68,465	4,589	73,054
Retained earnings	9,096	(130)	8,966
Accumulated other comprehensive income	2,522	9	2,531
Total stockholders' equity	80,083	4,469	84,552
Total liabilities and stockholders' equity	174,472	7,011	181,483

COMBINED RESULTS OF OPERATIONS, CASH FLOW AND BALANCE SHEET DATA

Fiscal year Ended
June 30, 2015

(in \$ millions, except per share amounts)	
Net revenue	96,571
Gross margin	62,694
Operating income (loss)	18,010
Income (loss) before income taxes	18,292
Net income (loss)	12,028
Earnings (loss) per share, basic	0.2
Earnings (loss) per share, diluted	0.2
Weighted average shares outstanding, basic	8,306
Weighted average shares outstanding, diluted	8,383
EBITDA	18,758
EBIT	17,728
INTEREST EXPENSES	282
Cash and cash equivalents	6,141
Total assets	181,483
Short-term debt	4,985
Long-term debt	28,935
Total stockholders' equity	84,552

MICROSOFT - LINKEDIN (2019)

MICROSOFT STATEMENT OF INCOME	
	Microsoft Fiscal year ended June 30, 2019
(in \$ millions, except per share amounts)	
Net revenue:	
Products	66.069
Services, including software related	59.774
Total net revenue	125.843
Cost of net revenue:	
Products	16.273
Service and other	26.637
Total cost of net revenue	42.910
Gross margin	82.933
Operating expenses:	
General, and administrative	4.885
Research, development, and engineering	16.876
Sales and marketing	18.213
Depreciation and amortization	
Impairment, integration, and restructuring	0
Total operating expenses	
Operating income (loss)	42.959
Interest and other, net	729
Income (loss) before income taxes	43.688
Income tax provision (benefit)	4.448
Net income (loss)	39.240
Earnings per share:	
Basic	5
Diluted	5
Weighted average shares outstanding:	
Basic	7.673
Diluted	7.753
EBITDA	42.933

MICROSOFT STATEMENT OF FINANCIAL POSITION

	Microsoft Fiscal year ended June 30, 2019
(in \$ millions)	
Current assets:	
Cash and cash equivalents	11.356
Short-term investments (including securities loaned of \$204 and \$75)	122.463
Total cash, cash equivalents, and short-term investments	133.819
Accounts receivable, net of allowance for doubtful accounts of \$426 and \$335	29.524
Inventories	2.063
Other	10.146
Total current assets	175.552
Property and equipment, net of accumulated depreciation	36.477
Operating lease right-of-use assets	7.379
Equity and other investments	2.649
Goodwill	42.026
Intangible assets, net	7.750
Other long-term assets	14.723
Total assets	286.556
Current liabilities:	
Accounts payable	9.382
Short-term debt	5.665
Current portion of long-term debt	5.516
Accrued compensation	6.830
Income taxes	
Short-term unearned revenue	32.676
Securities lending payable	
Other	9.351
Total current liabilities	69.420
Long-term debt	29.612
Long-term unearned revenue	4.530
Deferred income taxes	233
Operating lease liabilities	6.188
Other long-term liabilities	7.581
Total liabilities	184.226
Commitments and contingencies	
Stockholders' equity:	
Common stock and paid-in capital	78.520
Retained earnings	24.150
Accumulated other comprehensive income	(340)
Total stockholders' equity	102.330
Total liabilities and stockholders' equity	286.556

COMBINED RESULTS OF OPERATIONS, CASH FLOW AND BALANCE SHEET DATA

	Fiscal year Ended February 1, 2019
(in \$ millions, except per share amounts)	
Net revenue	125.843
Gross margin	82.933
Operating income (loss)	42.959
Income (loss) before income taxes	43.688
Net income (loss)	39.240
Earnings (loss) per share, basic	5.1
Earnings (loss) per share, diluted	5.1
Weighted average shares outstanding, basic	7.673
Weighted average shares outstanding, diluted	7.753
EBITDA	42.933
EBIT	42.230
INTEREST EXPENSES	729
Cash and cash equivalents	11.356
Total assets	286.556
Short-term debt	5.665
Long-term debt	29.612
Total stockholders' equity	102.330

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