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Introduction

Many regulatory efforts have been made over time to set minimum disclosure requirements for firms' financial and non-financial communication to the market. The goal of these regulations is to provide the public with more abundant and precise information, so that investors will make more efficient and informed capital allocation decisions (Goldstein and Yang, 2018). The question as to whether disclosure actually improves market efficiency has been widely investigated, and several authors have found that a greater amount or a better quality of disclosure can benefit investors by providing them with new and valuable information. For example, Lang and Lundholm (1996) find that firms with more informative disclosure policies benefit from a larger analyst following. Furthermore, such firms present more accurate earnings forecasts, less dispersion among individual analyst forecasts, and less volatility in forecast revisions, thus providing the market with more accurate information. Botosan (1997) finds that firms that attract a low analyst following benefit from greater disclosure in terms of a reduction in the cost of equity capital, likely due to the fact that lacking a high analyst following, disclosure plays an important role in satisfying the market's demand for information related to the firm. Interestingly, in a more recent study, Goldstein and

Yang (2018) construct a model suggesting that greater disclosure on a variable that the decision-maker cares to learn about negatively affects price informativeness. In markets that are effective in aggregating private information, this effect can be so dominant as to negatively impact real efficiency. However, disclosing information about variables that decision-makers know well always has a positive impact on real efficiency, as it leads decision-makers to focus on other dimensions about which they want to learn more.

In this essay, I will focus on disclosure regulation in the context of initial public offerings (IPO). In the U.S., firms that intend to go public must file a registration statement with the SEC and disclose a significant amount of financial and non-financial information in the final prospectus, also referred to as Form S-1. Specifically, the essay will focus on the disclosure provided by IPO firms that have recently undertaken an M&A transaction. M&A are often highly value-relevant deals that may affect firms' long-term performance. In fact, several studies in the field of M&A document that firms that have undertaken such a deal tend to underperform in the long-term. For this reason, it is interesting to observe how firms behave in terms of their disclosure choices regarding recent M&A transactions, which are events that can potentially impact investors' valuation of the IPO firm.

First, I will provide an overview of initial public offerings, the motivations behind the decision to go public and the associated costs, the players involved, and the required disclosure. I will then discuss a selection of studies that have analyzed the relationship between firms' disclosure choices in the prospectus and the IPO's pricing. Second, I will delve into the topic of M&A and discuss studies that have investigated the performance of M&A firms. Then, I will provide an overview of the literature that has analyzed the disclosure choices of M&A firms and the impact of these choices on market efficiency. Finally, I will provide a series of case studies which illustrate how disclosure behavior may differ from firm to firm in the context of pre-IPO M&A and mere reorganization transactions.

Initial Public Offerings

At some point during its lifetime, a private company may decide to go public by means of an initial public offering (IPO). According to Nasdaq[1], an IPO can be defined as a company's first sale of stock to the general public. According to PWC (2017), however, the concept of "going public" entails a series of consequences that go far beyond the mere issuance of shares to the public. Going public can be viewed as a process, consisting in gathering the necessary data for the registration statement and its subsequent submission to the Securities and Exchange Commission (SEC), all the

[1] www.nasdaq.com

way through to the roadshow and pricing. This process includes preparing the required financial, marketing and business information, as well as determining the optimal tax and legal structure of the transaction. Once the offering is sold and the company and its shareholders receive the proceeds, the IPO can be considered complete.

Costs and Benefits of Going Public

Going public places a company in a position where it may be subject to greater public scrutiny and stricter regulations. Public companies must comply with a number of complex laws, regulations, and disclosure requirements defined by the Securities and Exchange Commission (SEC), which inevitably generate a series of additional costs. Some companies choose to remain private, even in highly developed markets such as the United States. Going public is therefore a decision that implies the existence of underlying motivations. Scholars and researchers have discussed numerous motivations that might prompt a company to sell its stock on the public market. These include: access to fresh capital, the possibility to use the newly publicly traded stock as acquisition currency, diversification of investor holdings, attraction and retention of talented employees, overcoming borrowing constraints by accessing a source of capital alternative to bank loans, greater bargaining power with banks, monitoring, enhanced reputation and investor recognition, change of control, and windows of opportunity.

Access to fresh capital. One important consequence of the decision to go public is the possibility to access the public capital market. This circumstance allows the public firm to raise cash and long-term capital, which the firm can use to expand operations, capture new investment opportunities, and reduce debt (PWC, 2017).

Acquisition currency. Another important motivation behind the decision to go public is the possibility to use the newly publicly traded stock as currency to acquire other companies. Using stock as currency allows for firms to expand through acquisitions while simultaneously conserving cash. Therefore, many firms undertake IPOs in order to fund M&A activity and support firm expansion. In their survey of 336 CFOs concerning, among others, the motivations underlying the decision to go public, Brau and Fawcett (2006) find that this particular motivation is the primary driver of the decision to undertake an IPO.

Liquidity and portfolio diversification. According to Brau and Fawcett (2006) and Pagano et al. (1998), firms may go public in order to diversify and reduce investor holdings. Portfolio diversification can be achieved either directly, by divesting from the company and reinvesting in new assets, or indirectly, by raising fresh capital and using the newly acquired capital as acquisition currency to acquire stakes in other firms. Furthermore, being listed on an exchange allows

shareholders to trade the company's stock on the public market and therefore increases the liquidity of the shares.

Attraction and retention of talented employees. According to PWC (2017), the trading of the company's stock on public markets may serve to attract and retain talented employees. This can be achieved by implementing incentive and benefit plans in the form of stock ownership arrangements.

Source of capital alternative to bank credit. The newly gained access to equity capital provides public companies with a source of financing alternative to bank credit, which can be particularly appealing for companies with large current and future investments, high leverage, and high growth (Pagano et al., 1998).

Greater bargaining power with banks. Citing Rajan (1992), Pagano et al. (1998) maintain that by disseminating information on the stock market to the generality of investors, companies increase the competition the competition faced by their lenders, who no longer have privileged access to information regarding the company's creditworthiness, and therefore reduce the cost of credit.

Monitoring. According to Pagano et al. (1998), the stock market represents a managerial discipline device. First, by exposing the company to the danger of a hostile takeover; second, by giving shareholders the possibility to design efficient compensation schemes for their managers, for example by offering them stock option compensation plans or by indexing their salaries to the stock price.

Enhanced reputation and investor recognition. Both Pagano et al. (1998) and PWC (2017) discuss enhanced reputation and investor recognition as a benefit of going public. Specifically, an IPO serves as a certification of quality to the eyes of the public and thus enhances the company's reputation to stakeholders such as creditors, suppliers, clients, and employees. Furthermore, listing the company on a public exchange increases the visibility of the company by making a greater number of shareholders aware of its existence.

Change of control. Pagano et al. (1998) cites the intention to transfer the ownership of the company as a motivation behind the decision to go public. From this perspective, going public can be seen as a step to achieve the structure of ownership in the company that will maximize the value generated for the original owner by the final sale of the company.

Windows of opportunity. Finally, according to Pagano et al. (1998) companies might go public in order to take advantage of periods in which stocks in the industry are overvalued.

In a study of 69 Italian companies gone public in the period spanning from 1982 to 1992, Pagano et al. (1998) find that the main ex-ante determinants of the decision to go public are the market-to-book ratio of firms in the same industry, the size of the company, and the existence of major

investments and abnormal growth. The authors also investigate the ex-post consequences of the IPO and find that the profitability of companies tends to decrease in the period following the IPO, that companies are able to borrow more cheaply after the IPO, and that IPOs are followed by an abnormally high turnover in control. According to Pagano et al. (1998), a one standard deviation increase in the market-to-book ratio of firms in the same industry increases the probability of an IPO by 25%. The authors interpret this finding as either a higher investment need in high-growth sectors, or the entrepreneur's attempt to time the market. The latter explanation seems more likely, as in testing the ex-post consequences of the IPO, the authors find a significant drop in profitability, indicating that the original owners might be prompted to undertake an IPO in order to exploit mispricing in the company's industry. In regards to size, Pagano et al. (1998) find that larger companies are more likely to go public. However, the authors also highlight that this may be a phenomenon characteristic of the European market, as in the United States it is much more common for young firms to go public in order to finance their initial investments. Next, the authors find that firms exhibit a higher probability of going public after having made major investments and having experienced abnormal growth, likely in the attempt to rebalance their balance sheets. This last finding is also characteristic of the European market and stands in contrast to the United States, where newly listed companies experience phenomenal growth. The finding that the cost of borrowing for public firms is lower is supported by an observed decrease in the interest rate for short-term credit, as well as an increase in the number of banks willing to grant them loans. Finally, the authors find that IPOs are followed by an abnormal increase in turnover of the control structure of the company, supporting the theory that IPOs are a step in the sale of a company utilized to maximize the owner's proceeds from the transaction.

The benefits of going public must be carefully weighed against the potential drawbacks of this decision. IPOs are a costly and risky venture, which entail a series of costs from both a financial and non-financial perspective: administrative expenses and fees, forfeiture of the company's ownership, loss of confidentiality, and costs arising from adverse selection.

First, IPOs generate considerable direct costs in the form of administrative expenses and fees. Going public is a complex process that requires the assistance of an advisory team consisting of legal advisors, external auditors, underwriters, and other key advisors (Brown et al., 2020). Furthermore, other expenses such as printing costs, the SEC filing fee, and the exchange listing fee also arise in the occasion of an IPO. In addition to these initial fixed costs, being public implies several yearly costs for auditing, certification, and dissemination of accounting information, stock exchange fees, and so on (Pagano et al., 1998).

Second, selling equity represents a permanent forfeiture of part of the company’s ownership and of the associated returns to external investors; in other words, opening the firm’s capital to new investors entails a loss of control over the company (PWC, 2017).

Third, being public implies a loss of confidentiality. The disclosure regulations enforced by the SEC (specifically, the registration statement and the subsequent filings) require the public company to provide a great deal of information related to the company’s business, operations and finances to the general public, and thus to potential competitors. More specifically, companies must disclose extensive financial information, information related to the compensation of officers and directors, and information related to security holdings of specific shareholders (PWC, 2017). In addition, public companies are more exposed to the scrutiny from tax authorities, which reduces their scope for tax elusion and evasion (Pagano et al., 1998).

Finally, going public might generate costs in the form of underpricing, a phenomenon which may arise from the information asymmetry between issuers and investors at the time of the IPO. Investors are less informed than the issuers about the true value of the company going public. This situation adversely impacts the price at which the shares of the newly public company may be sold, and thus determines the magnitude of the underpricing needed to place them on the market (Pagano et al., 1998).

Going public is a crucial step in a company‘s lifetime. It is an event that brings about major changes for the company from many different points of view, such as capital and shareholder structure, regulatory requirements, and public visibility. The decision to undertake this step is often attributed to the need to raise fresh capital, but many other considerations, such as the desire to raise acquisition currency, may prompt a company to go public. However, going public also raises a series of costs for the company, which are of both financial and non-financial nature. Furthermore, being public may not be the optimal choice for every single company and it is by no means a necessary stage in the lifetime of a company. Therefore, both the potential costs and benefits of the IPO should be considered before going public, as well as the particular characteristics and context of the firm.

IPO Process

The IPO process is complex and involves several different parties in addition to the issuing firm. In general, the three main players involved in the process are the issuing firm, the underwriter, and investors, whose relationship plays out in the following main phases of an IPO. The main phases of the IPO are the following: the selection of the underwriter, the underwriting agreement,

the drafting of a letter of intent, the drafting of an initial prospectus, the roadshow, and the execution of the underwriting agreement (Lowry et al., 2017).

The first step for the issuing firm is to select an investment bank which acts both as an underwriter in connection to the issue, as well as an advisor to the firm during the whole process. The determining criteria for the selection of the underwriter and advisor are typically the investment bank's reputation and their expertise in the company's specific industry. An underwriter is not the only player with whom the issuing firm interacts during an IPO process; in order to successfully design the IPO, the issuing firm needs to request the services of legal, tax, and accounting advisors as well.

The underwriter and the issuing firm then typically arrange a "firm commitment" underwriting in which the investment bank, acting as an underwriter, purchases the entire issue of securities from the issuing firm and then resells the stocks to the public on the IPO day. The underwriter is compensated for its services by means of the gross spread, which is defined by the difference between the price at which the underwriter purchases the issue and the price at which the underwriter sells the stocks to investors.

The entity of the gross spread is defined in the letter of intent drafted by the underwriter, which contains other rights and obligations in the underwriter-firm relationship, such as an agreement by the company to cooperate in all due diligence efforts undertaken by the underwriter by providing all necessary and relevant information. The due diligence performed by the underwriter is a necessary step in the formation of the registration statement which the issuing company is required to file with the SEC. The Form S-1 registration statement is also known as the IPO prospectus, and its content, also in terms of disclosure, is regulated by the SEC.

The first version of the prospectus is known as the "Red Herring", and it represents an important tool for the issuing firm and the underwriter to begin marketing the upcoming issue. Once filed, the SEC and the issuing firm engage in a series of rounds whereby the SEC communicates to the issuer any changes that must be made to the preliminary prospectus, and the company responds to such comments by providing amended prospectuses. The initial price range is typically contained in an amendment prospectus.

Once all the points raised by the SEC have been resolved, the issuing company and the underwriter begin the real marketing effort of the offer, known as the "roadshow", where the IPO is promoted to several institutional investors through various channels, typically over the span of a few weeks. During this time, potential investors may present letters of interest to the underwriter.

Prior to the IPO day, having collected information from investors on demand for the issue, the firm and the underwriter agree on the price and on the number of shares to be sold in the IPO. An IPO is often underpriced, in the sense that investors can expect the price of the stock to rise on the first day of trading. Once these terms are negotiated, the issuing firm and the underwriter execute the Underwriting Agreement and the final prospectus is released. The final prospectus must be approved by the SEC, after which the sale of the company's stock begins. Once the stock has been delivered, the underwriter deposits the net proceeds from the IPO into the firm's account, and the IPO can be considered complete.

IPO Valuation

The IPO process culminates with the determination of an offer price at which the issuing company's shares are sold to investors on the IPO day. The determination of this price is the result of a complex interplay between the issuing firm, the underwriter, and investors, and it is influenced by factors of both quantitative and qualitative nature (Gad, 2020). In fact, at least three prices are determined for the firm's shares during the IPO process (Hanley and Hoberg, 2010): an initial price range, a final offer price, and a market price.

First, after the due diligence performed by the underwriter, the underwriter and the firm issue the initial prospectus, which contains an initial price range. The due diligence process performed by the underwriting firm is useful to reach a valuation of the company based on both the company's current situation as well as its future growth prospects and financial performance.

Second, the underwriter and the issuing firm agree upon a final offer price after evaluating the information on investor demand that was gathered during the roadshow and during book-building. At this stage, the initial price range determined based on the due diligence efforts is refined thanks to the information generated by investors during book-building, which is a critical factor influencing the final offer price. If no new information is revealed during book-building, then the final offer price should be equal to the initial offer price determined in the "Red Herring" prospectus (Hanely and Hoberg, 2010).

Finally, a market price for the newly public firm's stock is established once trading of the issued shares begins. The market price on the first day of trading is used to calculate the initial return of the IPO. The phenomenon by virtue of which investors gain a return on the purchased shares after the first day of trading is known as underpricing: the offer price of the share is typically lower than the first-day market closing price. A large amount of literature exists on the topic of underpricing, which seeks to discern the motivations behind companies' tendency to "leave money on the table" in their IPO.

Underpricing

Underpricing, also known as the initial return on the IPO, is measured by the difference between the final offer price and the first-day market closing price of the stock sold in the IPO. There is extensive evidence that IPOs tend to be underpriced (Lowry et al., 2017). However, the reasons behind this phenomenon are still unclear to most scholars and researchers. Several theories for underpricing have been advanced. A number of these theories fall under the broad category of information asymmetry between the issuing firm, the underwriter, and investors. Underpricing has also been explained as representing a risk premium for investors, a means to reduce the risk of litigation, or a marketing tool. Underpricing may also be exploited to broaden the ownership base of the IPO or to increase analyst coverage of the firm. Finally, two other theories to explain underpricing are prospect theory and signaling theory.

Risk premium. At first glance, underpricing may seem to serve as a risk premium for investors who confer capital to the IPO firm. According to Ritter and Welch (2002), however, the average magnitude of the level of underpricing does not justify fundamental market misvaluation or asset-pricing risk-premia. The authors evaluate a sample of 6249 IPOs from 1980 to 2001 and find an average first-day return of 18,8 percent. Considering that the comparable daily market return at the time averaged only 0,05 percent, it is clear that the level of underpricing is too high, on average, to be justified by the need to compensate investors for the risk taken.

Information asymmetry. Several underpricing theories are rooted in the information asymmetry existing between the main players of the IPO process. Information asymmetry places the three main parties involved in the IPO (the firm, the underwriter, and the market) in a position whereby each party has an information advantage in comparison to the other party, but at the same time lacks critical information that the other party possesses (Lowry et al., 2017). In particular, several types of informational frictions affect IPO underpricing (Benveniste and Spindt, 1989). First, issuing firms are likely to possess more information about their own business situation, and may have an incentive in representing themselves to underwriters in a more favorable light. Second, under information asymmetry, high-quality issuers face the 'lemon' problem, in that investors may not be willing to pay the price that accurately reflects the company's value, but are rather inclined to pay less in order to compensate for their lack of information. In this situation, the firm may opt to either signal its quality by communicating its characteristics and attempting to raise the offer price, or to sell the shares at a price lower than that which investors believe the shares are worth (Lowry et al., 2017). Third, investors may benefit from superior market knowledge in terms of factors such as the issuing firm's competitors, and characteristics of the firm that the firm cannot convey credibly. In

this case, neither the firm nor the underwriter can know precisely what the market's valuation of the stock will be (Benveniste and Spindt, 1989).

Information asymmetry between the firm and investors is also considered as a factor influencing underpricing in Rock's (1986) model (cited by Lowry et al., 2017), which distinguishes between informed and uninformed investors. The former are able to determine the quality of the firm, and consequently whether the issue is overpriced or underpriced given the offer price, while the latter are not. For this reason, the informed investors only subscribe to the high quality issues, causing uninformed investors receive a disproportionate allocation of the low quality issues. Consequently, in order to ensure that the uninformed investors receive a fair rate of return in relation to the informed investors and to compensate them for participating in the IPO, issues must be underpriced on average. Extending this analysis, Benveniste and Spindt (1989) and Sherman (2000) and Sherman and Titman (2002) (cited by Lowry et al., 2017) develop book-building theories, which postulate that investors who engage in the most information production should obtain the largest allocations. In this context, underpricing plays a role in motivating investors to engage in costly book-building and thus to provide the underwriter with crucial information regarding the firm's market value and aggregate demand for the firm's shares.

Focusing on the information asymmetry between the underwriter and the other two players involved in the IPO, Baron and Holmstrom (1980) argue that underwriters exploit the private information gained during pre-market activities, and thus ingratiate themselves with institutional investors or reduce the effort required to sell the issues. According to the authors, the underwriter and the issuer possess asymmetric sets of information, where the issuer is at a disadvantage and must seek counsel from the underwriter regarding the demand for the issue and the state of the capital market. The underwriter, for example, might know more about the demand for the issue through preselling contracts with potential buyers. In this case, the underwriter might have an interest in setting a price that is too low for the issue to limit the costs incurred in the selling efforts. More generally, numerous papers have examined the influence of conflicts of interest on the allocation of shares in an IPO (Lowry et al., 2017). These papers present evidence which suggests that allocations may be driven by favoritism, whereby investment banks seek to win the favor of good clients by giving them access to underpriced IPOs, among other questionable practices. In their survey of 336 CFOs, Brau and Fawcett (2006) find that issuers perceive these conflicts of interests as being of importance in determining the offer price of an IPO.

Share allocation. Share allocation, on the other hand, refers how IPO shares are distributed among investors. According to Hsou et al. (2012), previous studies (cit. Aggrawal et al. (2002)) have

argued that companies choose to leave money on the table by underpricing in order to enhance investor demand for the issue.

Risk of litigation. Underpricing may also be exploited to reduce the risk of litigation. Authors such as Tinic (1988), Hughes and Thakor (1992), and Drake and Vetsuypens (1993) (cited by Brau and Fawcett, 2006) argue that greater underpricing reduces the threat of litigation. Hanley and Hoberg (2010) find evidence that firms utilize both higher levels of underpricing as well as disclosure in order to avoid litigation: firms with poorer disclosure quality tend to exhibit higher levels of underpricing, as opposed to firms with better quality disclosure. Because legal penalties are based on both alleged damages and alleged insufficient disclosure in the prospectus, the authors conclude that firms may either produce higher quality disclosure or compensate investors with higher underpricing in order to protect themselves against litigation risk.

Marketing tool. Underpricing may represent a potential marketing tool for the firm. According to Brau and Fawcett (2006), several authors, such as Welch (1992) and Habib and Ljungqvist (2001) have argued that underpricing may fulfil a marketing function for the issue or the company as a whole. Welch (1992) models the idea that underpricing can provoke a domino effect among investors, which increases demand for the issue, while Habib and Ljungqvist (2001) argue that underpricing allow for cost savings in other areas related to the marketing of the IPO transaction.

Broadening the ownership base of the IPO. The desire to broaden the ownership base of the company might also explain underpricing. Booth and Chua (1996) develop a model whereby underpricing may be used to promote oversubscription of the issue and broaden the ownership base of the firm, which in turn enhances the liquidity of the stock. There is an incentive to improve the secondary market liquidity of the shares, as this reduces the required return to investors.

Prospect theory. Loughran and Ritter (2002) develop a behavioral explanation for underpricing. According to prospect theory managers are more interested in the change in their wealth rather than in its aggregate level. Thus managers, pleasantly surprised by the amount of proceeds they can raise in an IPO transaction, are not particularly concerned with the fact that a large amount of money was left on the table.

Signaling theory. Certain authors have posited that underpricing may serve as a signal for the firm's quality. From this perspective, firms may use underpricing to prove that they are able to cover the costs incurred in providing a higher return to investors and thus distinguish themselves from lower-quality firms, which do not possess the resources to do so (Allen and Faulhaber, 1989); Grinblatt and Hwang, 1989; Welch, 1989 as cited by Lowry et al., 2017).

Increase in analyst coverage. Underpricing has been linked to a possible increase of analyst coverage of the newly public firm. As cited by Lowry et al. (2017), Loughran and Ritter (2004) develop the analyst lust hypothesis, whereby firms are willing to accept high levels of underpricing set by prestigious underwriters in the hopes of accessing the coverage provided by influential analysts, which tend to be concentrated among high-quality investment banks.

Concerning the motivations behind a firm's decision to underprice its shares, Brau and Fawcett's (2006) survey evidence on the topic is enlightening. The authors collect survey data from 336 chief financial officers (CFOs) on the underlying drivers of underpricing, among other aspects related to the IPO (motivation, timing, underwriter selection, signaling, and the decision to remain private). According to the survey, only a few of the theories advanced in the literature are of significance from a practitioner's perspective. A majority of surveyed CFOs state that underpricing acts as compensation to investors for taking the risk of the IPO; that is, underpricing is mainly a consequence of market uncertainty and absence of perfect information. Three other important factors, according to CFOs, are a) underwriters' desire to gain the favor of potential clients, b) the desire to widen the base of ownership of the firm, and c) the desire to increase post-IPO trading volume, and thus the liquidity of the firm's stock.

Underpricing is a common feature of IPOs. A large amount of literature has investigated the motivations behind this behavior, as well as which specific characteristics of a firm might lead to underpricing. Several possible explanations, both theoretical and empirical, have been advanced. However, underpricing remains a topic of research and discussion.

Offer Price Revisions

The IPO pricing process begins with the setting of an initial offer price range contained in the initial prospectus that results from the underwriter's due diligence efforts. The initial offer price range is subsequently revised based on the information collected during the book-building process and during road-shows. The final offer prices reflects the pre-IPO market value of the company as well as implicit agreements between the underwriter and the issuer (Kutsuna et al., 2009). Typically, the offer price is only partially adjusted in response to new information (Hanley, 1993, cited by Kutsuna et al., 2009). It follows that the price adjustment is positively linked to the initial return (underpricing). An upward (downward) price revision is defined as the percentage upward (downward) revision in the offer price from the mid-point of the initial filing range (Loughran and McDonald, 2013). Several factors can determine offer price revisions. According to Kutsuna et al. (2009), three streams of literature have analyzed partial price adjustments of book-built IPOs. The first stream of literature concerns the informational aspect that may impact offer price revisions and it develops and tests the hypothesis that underpricing and partial adjustment of the offer price are

used to reward investors for disclosing information or to compensate them for acquiring information. A second stream of literature attributes underpricing and offer price revisions to the interactions between the underwriter and the management or the shareholders of the issuing firm. Here, the factors that determine offer price adjustments and underpricing are bargaining power, agency costs, implicit contracting, or issuer nonrationality. Finally, a third stream of literature focuses on the relationship between offer prices and long-run or intrinsic value of the issuing firm. I will discuss below some of the empirical studies that have focused on the relationship between offer price revisions and disclosure of information.

Offer price revisions may be affected by the amount of information available at the various stages of the IPO process. According to Hanley and Hoberg (2010), greater due diligence efforts of the underwriter in the pre-market contribute to the formation of a more accurate final offer price as measured by the percentage change in absolute value in comparison to the midpoint of the initial filing price range. The study documents a relationship between the accuracy of the offer price and the level of underpricing. The greater the informativeness of the prospectus, the smaller the offer price revision and the level of underpricing. This phenomenon can be explained by the trade-off that exists between a greater amount of pre-market due diligence and the amount of information generated during the book-building process. If underwriters invest more in pre-market due diligence, then investors will need to reveal less information during book-building. Because information production is costly for investors, the less information they need to reveal, the less compensation they will receive in terms of underpricing. In this perspective, underpricing serves as a compensation for investors for revealing information about the firm during the book-building process.

Consistent with the hypothesis that pricing in an IPO may be used as a tool to compensate investors for costly information production, Kutsuna et al. (2009) use a sample of Japanese IPOs spanning from 1997 to 2003 and find that the adjustment of offer prices is constrained by the maximum and minimum prices of the filing range, and these bounds are affected by earlier price discussions and by the desire to compensate investors for acquiring information and disclosing it. The tendency to constrain upward price revisions can be explained as a means used by the underwriter to encourage investors to engage in information production during book-building.

Offer price revisions have also been linked to uncertainty. Loughran and McDonald (2013) report that a greater amount of uncertain text in the Form S-1 is associated with a greater magnitude of offer price revisions and subsequent volatility of the stock. The authors provide evidence that the tone of the Form S-1 is related to upward price revisions. “This can be explained by a weak

informational position of the issuer relative to underwriters which allows for a greater partial adjustment of offer prices." This finding is supportive of the information production hypothesis.

IPO Disclosure

Form S-1

The decision to undertake an IPO is a crucial step in a company's lifetime. The act of going public is a complex process that entails a series of consequences, which ultimately affect the company from various points of view. Economically and financially, a company that undertakes an IPO opens its capital and thus gains access to new and unprecedented sources of funds. However, the decision to go public also raises a series of costs. Among these are the costs that the firm must bear to comply with the Security and Exchange's (SEC) disclosure requirements for public firms.

Public companies in the United States are subject to SEC laws and regulations, which govern the securities industry, the most significant being the Securities Act of 1933. As stated by the SEC, the purpose of the 1933 Act is to "a) require that investors receive financial and other significant information concerning securities being offered for public sale, and b) prohibit deceit, misrepresentations, and other fraud in the sale of securities"[2]. In order to achieve these goals, the Securities Act of 1933 establishes the concept of registration, whereby companies seeking to offer their securities to the public for sale as a means of raising funds must first register with the SEC (Brunner, 2005). The registration of the company with the SEC requires the company to disclose important financial and non-financial information. According to the SEC, "[t]his information enables investors (…) to make informed judgments about whether to purchase a company's securities"[3].

For U.S.firms, one of the first requirements for going public is to file a Form S-1on the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system (Loughran and McDonald, 2013). The Form S-1 registration statement filed by the issuing company contains what is known as the prospectus. As a general rule, the prospectus describes various attributes of the issuer, such as the issuer's business model, the current financial condition in which the issuer is in and its future financial performance, its capitalization, and the intended usage of the funds raised by means of the issue. Form S-1 is required for companies registered with the SEC less than three years, and it entails the fullest degree of disclosure (Brunner, 2005); it contains up to three years of audited financial statements, along with supplemental financial information deemed relevant by managers. The significance of this document lies in its role as a key marketing tool used by management and

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[2] www.investor.gov

[3] See note 2.

the underwriters in road shows and investor meetings to solicit demand for the shares during the book-building process (Brown et al., 2020).

More specifically, the disclosure requirements and the related timing for Form S-1 are summarized below (PWC 2017):

- Audited income statements (three years);
- Audited balance sheet (two years);
- Statement of cash flows (three years)
- EPS (three years);
- Management discussion and analysis;
- Selected historical financial data (five years);
- Separate financial statements for significant acquisitions (up to three years);
- Pro forma financial information;
- Interim financial statements (if the fiscal year-end financial statements are >134 days old, except for third-quarter financial statements, which are timely through the 45th day after the most recent fiscal year-end).

The Impact of Disclosure on IPO Performance

There is extensive literature that investigates the relationship between the content of the IPO prospectus and the performance of the IPO, as reflected by the magnitude of underpricing, the revisions to the offer price, or other relevant performance metrics. The IPO prospectus is subject to precise disclosure requirements. Nevertheless, the management of the firm can exercise a certain level of discretion in determining the content of the prospectus. This circumstance has created fertile grounds for empirical research on the costs and benefits of different disclosure approaches in the prospectus. On a general note, several authors find that a greater amount or a greater quality of disclosure creates value for investors by providing them with new and valuable information regarding the firm.

Hanley and Hoberg (2010) analyze the costs and benefits of the premarket due diligence performed by the underwriter. Their main finding is that prospectuses containing a greater amount of informative content (disclosure in the prospectus specific to the issuing firm and not contained in past industry IPOs) relative to standard content (information available in past industry IPOs) result in greater pricing accuracy of the issue. The authors examine the impact of both standard and informative content on three pricing variables: the change in offer price from the midpoint of the initial file range, the absolute value of the change in offer price, and the initial return. In particular, more informative prospectuses present significantly smaller absolute changes in offer price as

compared to the initial filing price, as well as significantly lower underpricing, while the opposite is true for standard content (i. e. greater amounts of standard content relative to informative content in the prospectus reduce pricing accuracy). These results indicate that premarket information production can significantly increase pricing accuracy and reduce required information rents paid during book-building. The authors also find that incorporating a greater amount of informative content in the prospectus increases the administrative expenses the firm must bear to file the prospectus: both lawyer and auditor fees are significantly higher when the initial prospectus contains a greater amount of informative content. According to the authors, these relationships support the idea that there exists a trade-off between greater effort in pre- market due diligence and costly book-building. These findings are of significance, in that they ultimately suggest that information production is costly to investors, and thus that managers may benefit from providing more informative content in the IPO prospectus by subsequently reducing the compensation given to investors in the form of underpricing for the effort exerted in gathering information on the issuing firm. Similarly, other authors (cited by Hanley and Hoberg, 2010: Leone et al. (2007); Ljungqvist and Wilhelm (2003)) find that firms that are more specific in their disclosure in the Use of Proceeds exhibit lower underpricing.

Empirical evidence supporting the theory that greater or more precise disclosure creates value for investors is also contained in the work of Brown et al. (2020). The authors examine the consequences of the decision to disclose non-GAAP earnings metrics in the IPO prospectus in addition to standard disclosure of GAAP earnings information, basing their investigation on a sample of 693 book-built IPOs completed between 2003 and 2012 as reported in the Thomson Financial SDC database. According to this study, firms disclosing additional non-GAAP earnings metrics generally exhibit higher offer values and less severe undervaluation, as long as the non-GAAP metrics are not calculated with large recurring exclusions, resulting in non-GAAP IPOs being more accurately priced at all stages of the IPO valuation. More specifically, the test performed in this study indicate that non-GAAP IPO firms exhibit higher valuations at all three stages of the IPO process. The authors analyze the relation between non-GAAP disclosure and upward price revisions to the offer price as well as the level of underpricing on the first day of trading, and find that non-GAAP IPOs exhibit less pre-issue undervaluation and sustain less underpricing on the first day of trading. Overall, these results suggest that the disclosure of non-GAAP earnings is an economically significant indicator of IPO value that is incremental to GAAP financial information.

Loughran and McDonald (2013) assess the effect on first-day returns, offer price revisions, and market volatility of management’s tone and style of communication in the prospectus for a sample

of 1887 U. S. IPOs completed during 1997-2002. According to the authors, the Form S-1's tone provides a direct proxy for ex ante uncertainty about an IPO's valuation, and can thus be used to measure the impact of uncertainty on the IPO's valuation. Thus, the authors argue that S-1 filings with higher proportions of uncertain/weak modal words or negative words should increase investors' difficulty in precisely assimilating the value-relevant information by generating more uncertainty about the firm's future performance. In line with this hypothesis, the authors find that greater ex-ante uncertainty about an IPO's valuation, as proxied by high uncertain, weak modal, and negative word frequencies, produces higher first-day returns and large after market volatility in the studied sample of firms. Specifically, the authors show that a one-standard deviation increase in the proportion of weak modal or negative words is linked to an economically significant 4% increase in first-day returns. Furthermore, the authors find that higher frequencies of uncertain, weak modal, and negative words are linked to higher post-IPO stock return volatility in the 60-day period following the offering, a finding that supports the idea that a higher concentration of uncertain or negative words in the Form S-1 increases the valuation uncertainty surrounding the firm. Finally, the authors report that IPOs with higher proportions of uncertain or negative words in the prospectus exhibit higher absolute revisions in their offer prices. This final finding can also be interpreted as issuers using uncertain language in order to attract information production by investors. Overall, the results of this study suggest that the existence of greater uncertainty concerning the firm's current and future performance as expressed by the tone and word content of the IPO prospectus has an adverse effect on the firm's valuation.

Attempting to draw a more general conclusion from the above findings, one could state the IPO's performance, as measured by relevant metrics such as first-day returns and changes in offer price, may improve where investors are less exposed to uncertainty. Investors are more exposed to uncertainty about the issuing firm's future performance where disclosure in the prospectus is lacking in content or transparency. In this case, underpricing serves to compensate investors for their contribution to the production of information about the firm's value, as well as for their willingness to take a risk in the issuing firm. Uncertainty can also manifest itself in the management's tone and style of communication in the prospectus, as highlighted by Loughran and McDonald (2013), with a consequent cost for the firm in the form of underpricing.

Mergers & Acquisitions

Mergers and acquisitions (M&A) is a general term that indicates the consolidation of companies or assets by means of various types of financial transactions, including mergers, acquisitions, consolidations, tender offers, purchase of assets, and management acquisitions (Hayes,

2021). From a legal perspective, mergers and acquisitions differ in that a merger is a legal consolidation of two entities into one, whereas an acquisition is a transaction whereby one entity takes ownership of another entity's stock, equity interests or assets.

Corporate takeovers can take on either of two forms: that of a merger agreement or of a tender offer (Betton et al., 2008). In a hostile takeover, the acquiring company offers to pay the shareholders of the target company by means of a tender offer. The management of the acquired company is not consulted prior to the tender offer and no agreement is made between the two companies. Conversely, in a friendly takeover, the acquiring company and the target company predispose a merger agreement that defines the terms of the transaction.

M&A and Firm Performance

There exists a substantial body of literature on the topic of M&As and firm performance. Scholars and researchers have investigated the short-term and long-term effects on firm performance of these complex transactions in order to understand whether or not and under which circumstances M&As ultimately represent an opportunity for value creation. According to André et al. (2004), following the merger wave of the 90s there has been growing concern regarding the prices that are being paid for M&A deals and how these transactions may affect future corporate performance. André et al. (2004) highlight the fact that the available empirical evidence documents negative abnormal returns over the three to five year following the M&A that, in sum, surpass the positive abnormal returns reported over short-term windows, causing the net wealth effect to be negative.

Without aiming to provide an exhaustive overview of M&A literature, I shall report here a selection of studies that have analyzed the relationship between firms' participation in an M&A transaction and the subsequent long-run performance of the firms, as well as studies that summarize previous findings on this particular topic. The ultimate goal of this analysis is to utilize previous findings in order to understand whether the knowledge of a recently undertaken M&A transaction may affect investors' valuation of an IPO firm. It is interesting to note that several studies find a tendency of M&A firms to underperform in the long run. To introduce the topic, I will discuss the hubris hypothesis proposed by Roll (1986), which suggests that takeover gains may be overestimated by the management of the M&A firm. Then, I will discuss a selection of studies that show a poor long run performance of M&A firms. Agrawal et al. (1992) find that the stockholders of acquiring firms experience a significant loss of wealth over the five years following the merger, and that this result is not due to a slow market adjustment to the merger announcement. Agrawal et al (2000) provide an extensive review of the existing literature and find that long-run performance is negative

following mergers, though non-negative following tender offers. Finally, André et al. (2004) find that Canadian acquirers significantly underperform over the three-year period following the M&A.

Hubris hypothesis. Roll (1986) advances the hubris hypothesis as an explanation for corporate takeovers. The individual decision maker's hubris may explain why bids are made even when a valuation above the current market price represents a valuation error. Specifically, the author argues that takeover gains may have been overestimated if they exist at all, and that bidding firms affected by hubris pay too much for their targets. The observed takeover premium (tender offer or merger price minus pre-announcement market price of the target firm) transferred by the bidding firm to the target firm overstates the increase in economic value of the corporate combination. Roll (1986) reexamines the existing empirical evidence on mergers and tender offers in the context of hubris, and argues that the evidence supports the hubris hypothesis as much as it supports other explanations for corporate takeovers, such as taxes, synergy, and inefficient target management.

More specifically, the hubris hypothesis implies that if no gains are available to a corporate takeover, the market price of a target firm should increase upon the announcement of an unanticipated bid, and it should fall back to its original level or below should the first bid be unsuccessful and should no further bids be received. According to Roll (1986) previous studies find evidence that supports this implication. Concerning bidding firms, the hubris hypothesis predicts that the value of a bidding firm should decrease upon the announcement of a bid and upon actually winning a bid. However, the evidence supporting this implication is mixed: according to Roll (1986) several studies have found positive bidder gains, and several others have found losses. During the interim period between initial bid and successful outcome, empirical evidence shows that a pattern of loss in value of the bidding's firm shares, which is generally consistent with the hubris hypothesis. In summary, according to the author, the results examined in the paper provide no convincing evidence against the (hubris) hypothesis that all markets are operating efficiently and that individual bidders may be subject to mistakes in valuation.

Long-run underperformance of mergers. Agrawal et al. (1992) address the phenomenon, observed in previous literature, whereby acquirers exhibit significance underperformance over the one to three years following a merger. These findings of post-merger negative abnormal returns suggest that the expected performance gains following mergers may be overestimated. Jensen and Ruback (1983, p. 20, cit. Agrawal et al., 1992) note that "[t]hese post-outcome negative abnormal returns are unsettling because they are inconsistent with market efficiency and suggest that changes in stock prices during takeovers overestimate the future efficiency gains from mergers". More specifically, a finding of long run underperformance of M&A firms has three implications (Agrawal et al., 1992): First, systematically poor performance after mergers is inconsistent with the paradigm

of efficient capital markets. Second, much of the research on mergers examines returns surrounding announcement dates in order to assess the wealth effects of mergers. However, since returns following the announcement are ignored, this approach implicitly, and perhaps incorrectly, assumes that markets are efficient. Consequently, a finding of market inefficiency in terms of returns following mergers calls into question much of the previous research in this field. Third, a finding of underperformance may also support certain previous studies showing poor accounting performance after takeovers. In order to test previous findings, Agrawal et al. (1992) investigate the long run performance of merger firms and present two major findings: first, their results show that stockholders of acquiring firms experience a significant wealth loss of about 10% over the five years following the completion of the merger. Second, the authors find that the underperformance is not due to a slow adjustment of the market to the announcement of the merger. The results are based on a sample of 937 mergers and 227 tender offers, which represents nearly the entire population of acquisitions of NYSE and AMEX firms by NYSE firms over the period 1955 to 1987.

In a successive paper, Agrawal and Jaffe (2000) provide an extensive review of the literature on the topic of the long-run performance of M&A firms. Basing their analysis on a wide selection of studies in this topic, the authors conclude that long-run performance is negative following mergers, although it is non-negative, and perhaps even positive, following tender offers. Agrawal and Jaffe (2000) also assess the possible explanations for the literature's findings on poor long-run performance of merger firms. The four explanations that the authors discuss are the following: speed of adjustment, method of payment, performance extrapolation, and EPS myopia. Only the method of payment hypothesis seems to be supported by empirical evidence.

1) **Speed of adjustment**. One possible explanation of poor long-run performance of merger firms is that the market fully reacts to the merger at the announcement date, and the price decline that is observed in the subsequent years after the completion of the merger is due to unrelated causes. Another possibility is that the market may adjust slowly to the announcement of a merger. In this case, the long-run decline reflects the portion of the value created by the acquisition that was not captured in the announcement period return. Should the sped of adjustment hypothesis correctly explain the long-run underperformance of M&A firms, we should observe a relationship between the acquirer's announcement-period return and its post-merger return (André et al., 2004). Agrawal et al. (1992) test this hypothesis, however they find that this relation is not persistent over the entire sample period and reject this hypothesis.
2) **Method of payment**. The method of payment hypothesis suggests that there exists a relationship between the performance of the merging firms and the method of payment used

to purchase the target company's stock. According to existing theory, a firm tends to issue stock when its shares are overvalued, and debt when its shares are undervalued. As a consequence, the firm's share price should drop upon the announcement of an equity issuance. One study (Mitchell and Stafford, 1998, cited by Agrawal and Jaffe, 2000) shows that abnormal performance is worse for acquirers using equity financing as opposed to acquirers using other methods to finance the acquisition. According to the authors, empirical evidence found in M&A literature is generally supportive of the method of payment hypothesis.

3) **Performance extrapolation.** Rau and Vermaelen (RV) (1998), cited by Agrawal and Jaffe (2000) posit the performance extrapolation hypothesis. The performance extrapolation hypothesis states that both the market and the board of directors tend to extrapolate the acquiring firm's past performance while examining the potential value creation of a new acquisition (glamour firms, that is, firms with a high market value due to their recent past performance). This hypothesis has three implications. First, the market assumes that glamour firms make good acquisitions, because of good past performance. Consequently, glamour acquirers should experience greater abnormal returns at the takeover announcement date in comparison to value acquirers. Second, as the market gains new information on the acquisition, the market slowly reassess the quality of the acquirer. Since the glamour acquirer was initially overvalued, the long-run post-acquisition performance should be negative. Third, value acquirers should exercise greater prudence towards acquisitions than should glamour acquirers. Consequently, glamour acquirers are expected to pay greater acquisition premiums. Basing their conclusion on a past study, the authors conclude that the performance extrapolation hypothesis is consistent with empirical evidence on the long-run post-acquisition returns of merger firms.
4) **EPS myopia**. According to the EPS myopia hypothesis, managers might be more willing to overpay for an acquisition if it results in greater earnings per share (EPS). Furthermore, the market might overvalue such acquirers initially, with a consequent decline in long-run post-acquisition performance. However, according to the authors, this hypothesis is not supported by empirical evidence.

André et al. (2004) study the long-term performance of 267 Canadian M&A firms that completed the deal between 1980 and 2000. Their results show that Canadian acquirers significantly underperform in the three-year period following the event. Furthermore, the results of the study are consistent with both the extrapolation and the method-of-payment hypotheses: glamour acquirers and equity-financed deals tend to underperform.

The decision to undertake an M&A deal is often backed by the possibility of achieving synergies or cost savings from the union of previously separate entities. Much of the literature on the long-run performance of M&A firms, however, suggests that these firms may often fail to realize the expected benefits of the deal and thus underperform in the long-run. Whether investors are aware or not of this circumstance, it is nevertheless without question that the knowledge of a recently undertaken M&A is a value-relevant information that will impact investors' evaluation of a firm

M&A Disclosure

Merger and acquisition deals are often of high economic significance to acquirers and can substantially impact their operations (Shalev, 2009). For this reason, the FASB requires acquirers to provide detailed and comprehensive information on business combinations so that investors can evaluate the causes and effects of the acquisitions (Shalev, 2009) (see Appendix 1 for an overview of the GAAP disclosure requirements). Although these transactions are often justified by potentially high returns to investors in terms of synergies and cost savings, a significant amount of literature in this area finds that M&A firms tend to exhibit poor performance in the long run. For these reasons, disclosure on M&A deals is potentially crucial in the process of evaluating effects on acquirers' prospective earnings and cash flows. For newly public firms, the disclosure of information regarding recent M&A transactions in the prospectus may affect prospective investors' valuation of the IPO firm. Disclosure regulation on M&A transactions[4] is complex and calls on the firm to provide a potentially large amount of financial information to investors. Firms undertaking an IPO are also subject to certain disclosure rules regarding recent M&A deals, and must provide information in the IPO prospectus. Several researchers have investigated diverse aspects of firm disclosure in relation to M&A transactions, including the potential costs and benefits of M&A-related disclosure.

There does not seem to be a consensus in the literature as to whether more detailed and transparent M&A disclosure ultimately results in a positive impact on market efficiency. However, the empirical results in this area tend to point to the conclusion that greater or higher quality disclosure regarding M&A deals provides investors with new and valuable information, which in turn may improve market efficiency. In fact, there exists high demand for information related to business combinations (Johansen and Plenborg, 2013). However, disclosure related to business combinations is difficult to prepare, as it is complex and involves at least some estimates, and users of the disclosure are not very satisfied with the result (Johansen and Plenborg, 2013). The following

[4] See Appendix 1 and 2.

section is organized as follows: first, I will discuss the studies that have investigated management's behavior in relation to M&A disclosure. Then, I will give an overview of the studies that have attempted to identify the possible costs and benefits of greater M&A disclosure.

M&A Disclosure and Management's Behavior

Mergers and acquisitions are strategically relevant deals that involve large investments in terms of money and resources (Florio et al., 2018). Considering the magnitude of these transactions, the depth and extent of disclosure on M&As may represent a strategic choice for the firm's management. According to Florio et al. (2018), two contrasting motivations determine the quality of M&A disclosure provided by firms. On one hand, disclosure on M&A deals is useful to provide both investors and analysts with a means to assess the transaction and its subsequent effects on the acquirer's future earnings and cash flows. On the other hand, managers are aware of the fact that M&A deals often fail to meet the proposed objectives in terms of synergies, cost reductions, market share, and other common indicators used to measure the value creation of the M&A. Consequently, firms may choose to provide less disclosure in order to reduce the level of scrutiny by the market and to retain sufficient flexibility to justify future accounting choices. In the following section, I will discuss a selection of studies that have investigated firms' disclosure behavior in the context of M&As. Ne study finds that IFRS firms in Europe exhibit substantial lack of compliance with disclosure rules mandated by IFRS 3 Business Combinations. Florio et al. (2018) investigate the disclosure behavior of a sample of Italian firms and find that disclosure choices are influenced by specific characteristics of the transaction, in particular by the magnitude of the transaction, by the amount of goodwill recognized in the purchase price allocation, and by the sequence of business combinations. Finally, Shalev (2009) finds, similarly to Florio et al. (2018) that the quality of M&A disclosure is negatively impacted by the portion of the purchase price allocated to goodwill. Furthermore, Shalev (200) also finds that the level of M&A disclosure is associated with the future performance of the firm as measured by ROA, and that investors are quicker to incorporate "bad news" into their information set.

Non-compliance with M&A disclosure requirements. Certain studies indicate that companies tend to withhold information regarding M&A deals. Glaum et al. (2007) observe a substantial lack of compliance with IFRS 3 Business Combinations among European firms. The authors base their conclusions on a sample of 357 companies subject to IFRS, spanning 17 European countries, and representing all industries. All firms in the sample undertook acquisitions in 2005 and/or carried goodwill positions in their financial statements. The results are as follows. Over one-third of the evaluated companies do not provide detailed information concerning the components of the purchase price for the acquisition. Furthermore, about one-fourth of the companies refrain from

providing information on the classes of assets and liabilities acquired. The impact of goodwill, when recognized, is substantial, representing fifty percent or more of the acquisition price; however, only a minority of the companies provide a rationale for the recognition of goodwill. Finally, scarcely one-fourth of the assessed companies provide pro-forma disclosures regarding the acquisition.

Transaction characteristics and disclosure behavior. Florio et al. (2018) investigate the transaction-specific determinants of M&A disclosure. More specifically, the authors assess the following characteristics of the M&A: the sequence of the M&As undertaken by the acquirer, the cultural distance between the acquirer and the target company, the materiality of the business combination, and the amount of goodwill emerging from the purchase price allocation. The study refers to the unique Italian context, which is characterized by high discretion and potential sensitivity towards disclosure. The main finding is that acquirers provide greater disclosure for larger M&A deals and less disclosure for increasingly material M&As and for extreme amounts of goodwill recognized in the transaction. Furthermore, the authors conclude that voluntary disclosure is more sensitive to M&A-specific features than is mandatory disclosure. The sample is constructed by collecting nonfinancial companies listed on the Italian Stock Exchange before the financial crisis (2006–2008). The sample firms apply International Financial Reporting Standards (IFRS). According to the authors, the Italian context is unique for two reasons: first, Italy was one of the most dynamic European M&A markets before the financial crisis. Second, one can expect diversified company behavior toward disclosure, which may allow greater insight into the transaction-related drivers. The Italian market has several features that lead to this expectation: first, there is a strong presence of family firms and/or firms characterized by ownership concentration. Many of these firms are heavily financed by debt, and for this reason they are often closely tied to the banking system. Furthermore, legal enforcement tends to be weak. This allows managers to exercise greater discretion in their disclosure choices. Two opposing forces drive the extent and quality of M&A disclosure. For investors, greater disclosure related to the M&A deal may mitigate agency costs, as higher levels of disclosure can foster shareholders' ability to monitor managers' M&A decisions. Given that M&As are costly and risky ventures that exert significant influence on the participating firm's prospective performance and cash flows, this information is potentially crucial to investors, capital market participants, and other stakeholders that are interested in assessing the M&A. In contrast, managers may be interested in providing less information regarding the M&A. Management's motivation behind the decision to withhold disclosure on the M&A may be the incentive to overpay in M&A, the desire to contain the costs of producing M&A disclosure, and the desire to reduce scrutiny by users. This may be the case when disclosure

involves important proprietary information that represents a competitive advantage for the firm, or when there is a significant risk that the M&A will not generate the expected synergies. Given these preliminary hypotheses, Florio et al. (2018) find that certain characteristics of the M&A transaction may influence the quality of the disclosure provided by the acquiring firm.

The first main finding is that greater materiality of the M&A is linked to higher levels of disclosure regarding the deal. According to the authors, this phenomenon can be explained as follows. Given that accounting for business combinations is costly, companies may direct more resources towards deals that are of greater magnitude from the acquirer's perspective. This behavior may also allow the acquirer to obtain more funds to finance the transaction and maintain or reduce the cost of capital.

The second main finding is that there is a significantly negative association between business combination disclosure quality and the extreme magnitude of the goodwill recognized at the acquisition date. Goodwill often represents the largest single asset acquired in a business combination (Florio et al., 2018). Goodwill should reflect the synergies arising from the business combination, and thus the greater value generated because of the combination of two separate entities. According to IFRS 3 (IASB 2004b, § 51), goodwill acquired in a BC is recognized as an asset and is initially measured as the excess of the purchase price over the acquirer's interest in the net fair value of the acquiree's identifiable assets, liabilities, and contingent liabilities at the acquisition date. There exist concerns surrounding goodwill accounting, in particular with reference to the discretion allowed by accounting standards (Florio et al., 2018). Goodwill is classified as an asset with an indefinite useful life. Because it is subject to an annual impairment test, the value originally recognized may reverse into an unrecoverable impairment loss in the future. Therefore, providing less information about the acquired firm's characteristics, the factors that determine the purchase price allocation, and expectations of future performance, may allow managers to manipulate post-acquisition earnings to avoid, delay, or anticipate impairment losses at their discretion (Florio et al., 2018). Furthermore, because goodwill is not subject to amortization, increasing the portion of the purchase price allocated to goodwill may enable acquirers to present higher post-acquisitions earnings per share (Shalev, 2009). Thus, managerial opportunism may play a role in accounting for goodwill in the context of an M&A. Shalev (2009) further develops the reasoning associated with the decision to withhold information regarding goodwill in a business combination. Shalev (2009) states that abnormal amounts of goodwill allocated to the purchase price may be a signal of either (a) overpayment or (b) overstatement of goodwill in the allocation to avoid amortization expenses. Both of these circumstances can be considered "bad news" for investors, that is, a bad M&A deal. For this reason, Shalev (2009) argues that less forthcoming

M&A disclosure in the case of extreme amounts of goodwill is a finding also consistent with disclosure theory. Disclosure theory asserts that managers tend to reveal good news (defined as news that are expected to positively impact share price) and withhold bad news (Verrecchia, 1983, cited by Shalev, 2009).

Finally, Florio et al. (2018) find that voluntary disclosure is sensitive to a larger number of transaction-specific characteristics than is mandatory disclosure. More specifically, the quality and extent of voluntary disclosure is negatively linked to the business combination sequence and to higher goodwill materiality (as opposed to mandatory disclosure, which is only significantly related to extreme amounts of goodwill).

In a U.S. context, Shalev (2009) explores causes and effects of the level of disclosure related to business combinations. The first main finding, similar to that of Florio et al. (2018), is that acquirers' future performance as measured by the change in ROA and by abnormal stock returns increases with abnormal levels of disclosure on business combinations. The second main finding concerns the determinants of the extent of business combination disclosure. Namely, the extent of disclosure on business combinations decreases with abnormal levels of the purchase price allocated to goodwill. According to the author, these results provide evidence consistent with disclosure theory. The findings indicate that acquirers tend to provide less transparent disclosure on less favorable acquisitions, which is consistent with the hypothesis that firms tend to disclose "good news" and to withhold "bad news". Finally, the author shows that investors do not immediately incorporate the information content of business combination disclosure into their information. The sample used in this study consists of business combinations made by the non-financial S&P 500 firms consummated between July 2001 and December 2004. The sample includes 1019 business combinations and 297 acquiring firms. Overall, the sample represents 46 industries.

Shalev (2009) investigates the link between the level of M&A disclosure and the future performance of the firm. If less forthcoming disclosure on the M&A indicates "bad news", then a positive association between the extent of disclosure and the firm's performance is expected. It follows that acquirers presenting more forthcoming disclosure on their M&A deal should outperform acquirers that present less detailed information. This hypothesis is confirmed by the empirical results. Firms presenting abnormally greater disclosure on their M&A deals exhibit greater ROA in the two years following release of information, with every standard deviation change in abnormal disclosure corresponding to 3% in returns.

Shalev (2009) also tests whether and how quickly investors incorporate the value of differences in disclosure level on M&A deals into their information set. Namely, if a statistically significant relationship between abnormal M&A disclosure level and acquirers' future performance exists, then

this relationship should be reflected in share prices around the releasing of disclosure. The author finds that there is a time lag between the release of information and the time that such information is priced into shares. However, the evidence presented suggests that investors react more quickly to low abnormal disclosure. Thus, if low abnormal disclosure is a signal of "bad new", then investors are quicker to incorporate bad news into their information sets.

Costs and Benefits

The literature in the area of M&A disclosure has analyzed both the causes and effects of management's disclosure choices as well as the costs and benefits that M&A disclosure entails. Some studies, such as Bonetti et al. (2020) and Rodrigues and Stegemoller (2007) investigate the question of whether this type of disclosure creates or destroys value by evaluating specific legislation. In particular, Bonetti et al. (2020) find that the number of control acquisitions dropped after the implementation of the European Union's Transparecy Directive (TD), which introduced stricter disclosure requirements for control acquisitions. This finding is consistent with the idea that disclosure requirements increase acquisition costs for bidders. Another author (Uccellini, 2007) evaluates the effect of the introduction of the 964 Act on companies traded on the over-the-counter market, and reaches the opposite conclusion. According to Uccellini (2007), the 1964 Act's tightening of disclosure rules actually increases the level of M&A activity by decreasing acquisition costs for the acquirers. Rodrigues and Stegemoller (2007) analyze the loosening of disclosure requirements in 1996 and 2000 for the acquisition of private targets, and find that the disclosure of targets' financial information provides new and valuable information to investors. Similarly, Chen (2019) finds that the disclosure of the targets' financial information increases acquisition efficiency by disciplining managers' decisions regarding M&A deals.

Bonetti et al. (2020) study the effect of Directive 2004/109/EC, also known as "The Transparency Directive (TD)" on acquisition costs. According to the authors, the TD represents a major regulatory development in the European Union. The goal of this legislation according to ESMA[5] is to "ensure transparency of information for investors through a regular flow of disclosure of periodic and on-going regulated information and the dissemination of such information to the public". This is achieved by regulating information regarding, among other things, major holdings of voting rights of public firms. In particular, the new disclosure requirements are triggered when a firm or other party acquiring shares of a publicly listed firm accumulates a shareholding larger than a preestablished regulatory threshold. Bonetti et al. (2020) use the TD to investigate whether mandatory disclosure introduces costs that outweigh bidders' benefits from transparency. The results of the study confirm that the costs introduced by mandatory disclosure slow down takeover

[5] www.esma.europa.eu

activity and thus outweigh the benefits generated by greater transparency. The authors find that right after the introduction of the TD, the number of control acquisitions undertake by their sample of EU public firms abruptly decreases. This is to be compared with the potential benefit of greater disclosure, namely that enhanced information may facilitate deals by providing acquirers with more accurate information concerning targets. However, more stringent disclosure requirements may increase the costs faced by potential bidders and thus "deter some otherwise marginally profitable takeovers", thus decreasing market efficiency.

To justify the hypothesis that tighter regulation may decrease market efficiency by deterring otherwise marginally profitable takeovers, Bonetti et al. (2020) state three reasons as to why increased regulation regarding major ownership stakes may increase the costs sustained by bidders in the M&A market. More specifically, by tightening disclosure rules regarding acquisitions, acquirer's costs may increase due to defensive reactions of the target firm's management. First, for bidders intending to perform a hostile takeover, disclosing ownership information may prompt the managers of the target firm to prepare a defense against the takeover. Second, other potential bidders, once aware of the potential takeover, may submit competing bids. Finally, in anticipation of the synergies resulting from the acquisition, the stock price of the target may increase, making it more costly for the bidder to build a toehold by purchasing subsequent shares in the target firm. The authors find that target and acquirer stock around the acquisition announcement date behave in a manner consistent with this hypothesis. Around the acquisition announcement date, target firms exhibit higher stock price reactions, while acquiring firms exhibit lower stock price reactions. This suggests that the TD raised the acquisition costs for the acquirers. Furthermore, the authors also find that under the TD competing bidders hold a larger stake in the target firm, and that the size of the acquirer's toehold decreases. This evidence shows that the TD may spur defensive reactions by management of the target, thus increasing the acquisition costs for the acquirer.

Uccellini (2007) evaluates the effect on M&A activity caused by the 1964 Act's extension of mandated disclosure requirements to public companies traded on over-the-counter markets. The authors reaches a conclusion opposite that of Bonetti et al. (2020). According to Uccellini (2007), an enhanced information environment may prompt M&A activity levels to rise by providing the market with new and valuable information regarding the transaction. The author compares M&A activity levels of companies already covered by the legislation in question and the newly-covered over-the-counter (OTC) companies, and finds "an abnormal and episodic increase in M&A activity for newly-covered OTC companies in the ten years after the 1964 Act was implemented". The author provides two possible reasons why an increase in mandated disclosure may encourage M&A activity levels to rise. First, a greater quantity of publicly available information may reduce the

costs associated with the process of searching, identifying, and analyzing potential target companies, thus lowering the acquisition costs for the acquirer. Second, greater availability of accurate information reduces information asymmetry, which prevents the risk of the bidder's suffering a "winner's curse".

Rodrigues and Stegemoller (2007) show that the increase of the significance threshold for the acquisition of private target firms deprives the market of valuable information. They find that the acquisitions of "insignificant" target firms considerably affects market prices, and therefore question whether the benefits related to the relaxation of M&A disclosure requirements introduced in 1996 and 2004 outweigh the costs of not disclosing value-relevant information. To investigate the effect of new and loosened regulations on the disclosure of acquisitions, Rodrigues and Stegemoller (2007) analyze all takeovers of privately held firms and subsidiaries of privately held firms from 1983 to 2004 in which the acquirer is a U.S. firm. The resulting sample comprises 8858 firms. In particular, the authors find that about 80% of the acquisitions of privately held firms classified as insignificant by the new SEC standards are nonetheless economically relevant to investors. Furthermore, the authors document that the presence of the target's financial statements is significantly positively associated with acquisition announcement returns. This result indicates that target financials provide new, valuable, and material information to investors. Finally, the results show that the easing of disclosure requirements for the acquisition of private targets is associated with an increase in the absolute magnitude of abnormal returns around the acquisition announcement, as well as a decrease in gains to acquirer shareholders. Therefore, Rodrigues and Stegemoller (2007) conclude that the loosening of the financial statement reporting standards introduced in 1996 and 2000 for private targets is associated with an increase in the movement of prices around the acquisition date, without a related increase in the wealth of acquirer shareholders. The context of the study are the regulatory changes that occurred in 1996 and 2000. In these occasions, the SEC increased the significance threshold of privately-held targets, thus allowing public acquirers to avoid disclosing information on targets deemed "insignificant" by the new SEC standards. However, while a target may be "insignificant" according to the bright-line thresholds established by the SEC, it may still be "material" to investors, and thus significantly impact market prices. In sum, Rodrigues and Stegemoller (2007) conclude that "in the context of private acquisitions, the SEC's current standard of financial reporting does not mandate the disclosure of value-relevant information".

In a similar vein, Chen (2019) finds that enhanced disclosure in the context of M&As can be beneficial to shareholders, as it disciplines managers' acquisition decisions and thus improves acquisition efficiency. To reach this conclusion, the author analyzes a sample comprising private

target acquisitions from 1997 to 2009. The result that enhanced disclosure increases acquisition performance, and thus overall market efficiency, is observed despite the opinion of preparers and auditors that the disclosure requirements of private targets' financial information are costly and time-consuming. In the three years following the consummation of the acquisition, the study finds a 3.3% (15.0%) increase in operating (stock return) performance, as well as "a lower probability of subsequent goodwill write-downs and divestitures" associated with the disclosure of private targets' audited financial statements (Chen, 2019). The author argues that enhanced disclosure benefits shareholders in two ways. First, disclosure of the targets' financial information reduces information asymmetry for investors by providing them with information, which they can use to assess the quality of the decision made by management regarding the acquisition, and thus price the combined entity accordingly. Second, disclosure of the targets' financial information may also enable the acquirers' stockholders to more accurately link the acquisition decision to firm performance, and thus identify poor acquisition decisions. Consequently, managers may anticipate that investors will correctly assign blame for poor acquisition decisions, and will thus more likely act in the interests of shareholders when deciding upon whether to complete a deal.

The literature's findings on the effect of M&A disclosure on the market's information set are mixed, but it seems that a more accurate disclosure on these types of deals may improve market efficiency by providing investors with new and value-relevant information that allows for a more precise evaluation of the transaction's impact on the firms involved. In some cases, however, stricter disclosure requirements may prevent deals from taking place, even when they may have been profitable and thus improved overall market efficiency.

M&A Disclosure in the Context of IPOs

Disclosure requirements related to M&A activity are complex and require firms to release a considerable amount of financial information. Appendix 1 contains an overview of the general disclosure requirements for M&A transactions as mandated by ASC 805, "Business Combinations". A firm that intends to go public must also adhere to the additional SEC disclosure requirements for the filing of the Form S-1 (See Appendix 2). Specifically, companies intending to go public need to evaluate the significance of any acquisitions completed up to three fiscal years prior to the filing of the Form S-1. Registrants may be required to provide audited historical financial information in accordance with Rule 3-05 of Regulation S-X (PWC 2017). The literature's findings in the area of M&A disclosure show mixed results. However, based on a selection of studies investigating specific regulations, it appears that the benefits of greater transparency regarding M&A deals in terms of market efficiency may outweigh the costs related to preparing such disclosure. In the following section, I will focus on the value of the information related to pre-IPO corporate activity

included in the prospectus, specifically M&As, in order to assess whether or not this information ultimately influences investors' valuation of the issuing company. The research in this particular area has produced the following results. Ragozzino et al. (2014) argue that firms engaging in abnormally high levels of corporate activity prior to their IPO do so as a means to signal their quality to investors. Hsu, Young, and Wang (2012) focus specifically on pre-IPO M&A activity and find that investors more likely overvalue pre-IPO acquirers more severely than IPOs without prior M&A transactions.

Ragozzino et al. (2014) investigate firms having pre-IPO corporate activity and propose that this behavior may serve as a signal. The authors report that firms engaging in abnormally high levels of corporate activity prior to their initial public offering do so as a means to signal their value to prospective partners and investors. In the context of the study, Ragozzino et al. (2014) highlight the fact that entrepreneurial firms are characterized by severe information asymmetry vis-à-vis prospective investors, who are not able to easily observe the actual quality of the firm given the substantial lack of information on its account. Therefore, firms may engage in unusually high levels of pre-IPO corporate activity such as alliances, joint ventures, and acquisitions, in order to signal their quality and growth strategy, and thus to establish their credibility and legitimacy in the eyes of potential partners and investors. The authors support this conclusion by demonstrating that such firms exhibit greater post-issuing corporate growth as measured by their alliances, equity joint ventures, and acquisitions.

Hsu et al. (2012) investigate pre-IPO activity and document two main findings. First, that pre-IPO acquirers exhibit a higher opportunity cost of issuance in comparison to IPO companies without previous acquisitions. Second, pre-IPO acquirers significantly underperform IPO companies without previous acquisitions in the long run, with those who did not disclose M&A information in the prospectus performing worse than those who disclosed M&A information. These findings suggest that investor's valuation of pre-IPO acquirers, though lower than that of IPO companies without previous acquisitions, is not low enough. Therefore, investors tend to overvalue pre-IPO acquirers, and underestimate the difficulties of integration.. Furthermore, the overvaluation is more serious for acquirers not disclosing M&A information because investors know little about their pre-IPO M&A activity. In the long run, pre-IPO acquirers may disappoint investors after unfavorable information about them is released, thus underperforming IPO firms without previous acquisitions. The results documented in the study indicate that information disclosure in the IPO prospectus affects investors' valuation of IPO firms. In the U.S., pre-IPO acquirers are required to disclose information on their M&A only if the size of the target is significant according to the SEC (see Appendix 2). For this reason, many pre-IPO acquirers do not disclose information regarding their

M&A activity in the prospectus, causing investors to misvalue the firm. Concerning pre-IPO acquirers' opportunity cost of issuance, the authors argue that pre-IPO acquirers do not grant a greater price discount (underpricing is not significantly higher), but rather issue a greater number of shares out of fear of not being able to raise as many funds later due to poor performance. Therefore, pre-IPO acquirers issue a greater number of shares in order to raise more funds during the IPO.

The sample used to investigate pre-IPO acquisition activity is composed by 234 IPOs completed between 1996 and 2006, where the firm had undertaken an acquisition prior to the IPO. Each of these companies is matched with a similar IPO firm that went public during the same time period. Hsu et al. (2012) advance three reasons that may explain investors' tendency to overvalue pre-IPO acquirers. First, investors tend to underestimate the potential of M&As resulting in poor performance and/or failing as compared to initial expectations set by management, due to the difficulties arising during the process of cultural and operational integration. As a consequence, investors tend to extrapolate the rapid growth from pre-IPO M&As to the post-IPO performance. Second, investors may overvalue pre-IPO acquirers because some pre-IPO acquirer may go public merely to reap the benefits of the IPO, such as the possibility to raise funds, easier access to capital markets, lower financing costs, and greater convenience in cashing out. In order to do this, these firms may engage in M&A activity only to give the appearance of greater size or profitability. Third, investors may tend to overvalue pre-IPO acquirers as a consequence of M&A firms' tendency to underperform in the long run.

In sum, the findings of Hsu et al. (2012) confirm that information related to M&As undertaken prior to the IPO disclosed in the prospectus impacts investors' valuation of the IPO firm. Therefore, such disclosure provides investors with new and valuable information.

M&A deals are not always undertaken for real economic reasons related to corporate strategy or the realization of synergies. Groups of related firms may perform an M&A transaction in order to reorganize the ownership structure of a particular firm or rearrange the structure of the group as a whole. In such cases, certain firms may serve as mere vehicles to achieve the desired structure. It is interesting to assess whether or not a particular ownership structure may also impact investors' assessment of an IPO firm. One study evaluates the effect of ownership structure on IPO valuation in Taiwanese IPOs, and documents that outside shareholders incorporate the effect of potential expropriation by large entrenched shareholders, and that a deviating voting-cash structure is negatively correlated with the level of underpricing (Yeh, Shu, and Guo, 2008).

Ownership structure may influence pricing of the IPO firm. Focusing on the Taiwanese IPO market, Yeh et al. (2008) report that the deviation between voting and cash flow rights has a negative and significant effect on the ratios of offer and initial market price relative to the intrinsic value of the

firm. Furthermore, a deviating cash-flow structure is negatively correlated to the level of underpricing in the IPO. These results are found after testing two opposing hypotheses: the interest alignment hypothesis and the entrenchment hypothesis. The interest alignment hypothesis states that large shareholders have a strong financial incentive to monitor the firm's management. This behavior may mitigate agency costs and enhance firm value. The entrenchment hypothesis postulates that larger shareholders benefit from power over the nomination and monitoring of managers. Thus, they may become entrenched and pursue their own interests by expropriating minority shareholders. The expropriation of minority firms generates costs and reduces the value of the firm. The entrenchment problem is exacerbated in firms where there is a large deviation from the "one share equals one vote" ownership structure. This is particularly the case for firms characterized by a pyramidal structure and cross-shareholdings. The study is performed on a sample of 218 Taiwanese IPOs that were completed during the 1992-2001 period. The Taiwanese market is particularly fit to test the entrenchment hypothesis, as it is characterized by firms that are often controlled by shareholders through pyramidal structures and cross-shareholdings that confer voting rights in excess of cash flow rights to these shareholders. The authors find results consistent with the entrenchment hypothesis. Specifically, when large shareholders exert control through voting power in excess of their cash flow rights, they have less incentive to underprice the shares in order to maintain control, as the dominance of major shareholders is unlikely to be jeopardized after the IPO. As a result, both offer and aftermarket prices are lower when there is a large deviating voting-cash flow structure. Therefore, the IPO process incorporates the cost of the entrenchment of large shareholders into the valuation of the shares.

Case Studies

The disclosure related to recent M&A or corporate reorganization transactions in the prospectus is typically provided in the sections "Corporate Reorganization" and in the notes to the financial statements. However, the extent and quality of disclosure can vary based on the individual prospectus, and companies may opt to provide some preliminary information in the section "Prospectus Summary" or other parts of the prospectus. In this section, I will provide a series of case studies that analyze how specific companies have chosen to disclose information regarding their recent corporate reorganization or M&A in their IPO prospectus. Fifteen case studies will be presented for companies undertaking a corporate reorganization and/or M&A prior or in connection with the offering: five companies having undertaken a corporate reorganization, five companies having undertaken an M&A, and five companies having a combination of both corporate reorganization and M&A.

The companies that are presented were identified having undertaken an M&A transaction prior to the IPO based on an analysis of the goodwill reported in the balance sheets. Data on goodwill for the periods presented was hand-collected from a sample of 1,635 IPOs. If there was an increase in goodwill between the periods represented in the balance sheet, the company was identified as having undertaken an M&A in one of the reporting periods represented. The companies that undertook a corporate reorganization were identified by means of a word count analysis. In the case of a corporate reorganization, the words "corporate reorganization", "successor" and/or "predecessor" are likely to appear frequently.

Pre-IPO Corporate Reorganization

IPOs are often used as a means to create a group structure among related companies or to modify the corporate structure of an existing group. In some cases, the issuing company may become a holding company of the operating firms, which remain privately owned; in other cases, the operating companies merge into the issuing company after the completion of the IPO. The disclosure related to corporate reorganizations connected with the offering is typically contained in several parts of the prospectus. Most of the details regarding the reorganization are often, but not always, provided in a separate section of the prospectus entitled "Corporate Reorganization". The section "Capitalization" typically illustrates the effect of the corporate reorganization on the capitalization. Finally, a company may choose whether or not to provide a table illustrating the impact of the corporate reorganization on the ownership structure of the firm(s) before and after the consummation of the reorganization transactions.

Nexstar Broadcasting Group, Inc.

Nexstar Broadcasting Group, Inc. is selling 10,000,000 shares at a final offer price of $14 per share. Nexstar Broadcasting Group is a television broadcasting company focused on the acquisition, development and operation of television stations. Most of the stations that the Group owns and operates or provides services to are located in the Northeast, Midwest and Southwest regions of the United States. The group pursues strategic acquisitions of television stations. Since January 2000, they have acquired seven stations and contracted to provide services to six additional stations. According to the prospectus, when considering an acquisition, the Group evaluates the target's audience share, revenue share, overall cost structure and proximity to its regional clusters. Additionally, they seek to acquire or enter into local service agreements with stations to create duopoly markets.

MD&A. In Nexstar's prospectus, the section "Corporate Reorganization" is included as a subsection of Management Discussion and Analysis. The subsection Corporate Reorganization

describes in detail the reorganization transactions that will take place following the offering. As a result of the reorganization, Nexstar Broadcast Group LLC (the Predecessor) and certain of its subsidiaries will be merged into the issuing company, Nexstar Broadcasting Group, Inc. Further details are provided concerning the conversion of the remaining membership interests in Nexstar Broadcasting Group LLC.

Capitalization. In the section "Capitalization", the prospectus provides a table which sets forth the cash and capitalization as of September 30, 2003 on an actual basis, as well as on an as adjusted basis to give effect to the completion of the offering, the use of proceeds therefrom, and the corporate reorganization. Thus, the adjusted capitalization comprises both the effects of the offering and of the use of proceeds, in addition to those of the corporate reorganization. The effects of the corporate reorganization on the capitalization are not isolated.

	As of September 30, 2003 (unaudited)		
	Actual	As Adjusted	Pro Forma (Restated)[5]
		(dollars in thousands, except per share data)	
Cash and cash equivalents	$ 51,733	$ 84,735	$ 21,332
Debt:			
Senior credit facilities[1]	$ 197,150	$ 197,150	$ 229,500
12% senior subordinated notes due 2008, net of discount of $4,687	155,313	155,313	155,313
16% senior discount notes due 2009, net of discount of $9,291	27,697	—	—
11 3/8% senior discount notes due 2013, net of discount of $51,003	78,997	78,997	78,997
New senior subordinated notes due 2013	—	—	125,000
Preferred units subject to mandatory redemption	53,418	—	—
SFAS No. 133 adjustments[2]	3,503	3,503	3,503
Total debt[3]	516,078	434,963	592,313
Redeemable Class D-2 units	8,298	—	—
Members' contributed capital	118,685	—	—
Stockholders' equity:			
Preferred Stock, $0.01 par value, 100,000 shares authorized; no shares issued and outstanding actual, as adjusted and pro forma	—	—	—
Class A common stock, par value $0.01 per share, 100,000,000 shares authorized; no shares issued and outstanding, actual; 10,098,406 shares issued and outstanding, as adjusted; and 13,589,289 shares issued and outstanding, pro forma[4]	—	101	136
Class B common stock, par value $0.01 per share, 20,000,000 shares authorized; no shares issued and outstanding, actual; 13,331,358 shares issued and outstanding, as adjusted; and 13,411,588 shares issued and outstanding, pro forma	—	133	134
Class C common stock, par value $0.01 per share, 5,000,000 shares authorized; no shares issued and outstanding, actual; 1,362,529 shares issued and outstanding, as adjusted; and 1,362,529 shares issued and outstanding, pro forma	—	14	14
Additional paid-in capital	—	251,655	391,360
Accumulated deficit	(175,873)	(186,676)	(387,725)
Total members' interests (deficit) or stockholders' equity	(57,188)	65,227	3,919
Total capitalization	$ 467,188	$ 500,190	$ 596,232

Laredo Petroleum

Laredo Petroleum is issuing 17,500,000 shares at a final offer price of $17 per share. Laredo Petroleum is an independent energy company focused on the exploration, development and acquisition of oil and natural gas in the Permian and Mid-Continent regions of the United States. The prospectus provides an initial overview of the firm's financial results. The net cash provided by operating activities was approximately $233.7 million for the nine months ended September 30, 2011. The net average daily production for the same period was approximately 22,842 BOE/D, and the net proved reserves were an estimated 137,052 MBOE as of June 30, 2011. The prospectus summary includes a subsection "Corporate History and Structure", which contains detailed disclosure regarding a corporate reorganization that will be completed in concurrence with the closing of the offering. Laredo Petroleum, LLC will merge into Laredo Petroleum Holdings, Inc.,

with Laredo Petroleum Holdings, Inc. surviving the merger. Upon completion of the corporate reorganization, Laredo Petroleum Holdings, Inc. will have four wholly-owned subsidiaries: Laredo Petroleum, Inc.; Laredo Petroleum Texas, LLC; Laredo Gas Services, LLC; and Laredo Petroleum-Dallas, Inc. The section "Corporate Reorganization" also includes the subsection "Ownership structure immediately after giving effect to this offering", which provides a diagram illustrating the ownership structure after the completion of the corporate reorganization and the offering.

Corporate Reorganization. The prospectus also includes the section "Corporate Reorganization", which provides some new details regarding the corporate reorganization, but substantially repeats the information already provided in the prospectus summary.

Capitalization. In the section "Capitalization", the prospectus provides a table setting forth the capitalization of Laredo Petroleum, LLC and Laredo Petroleum Holdings, Inc. as of September 30, 2011 on an actual basis, as well as on an adjusted basis to give effect to the corporate reorganization. Thus, the effects of the corporate reorganization on the capitalization are shown separately and not in combination with the use of proceeds.

	As of September 30, 2011		
(in thousands)	**Actual**	**As adjusted to give effect to our corporate reorganization**	**As further adjusted for the effect of this offering(1)**
Cash and cash equivalents	$ 28,249	$ 28,249	$ 28,249
Long-term debt, including current maturities			
Senior secured credit facility(2)	$ 525,000	$ 525,000	$ 247,706
Senior unsecured notes due 2019(3)	$ 350,000	$ 350,000	$ 350,000
Owners'/stockholders' equity	$ 438,211	$ 438,211	$ 715,505
Total capitalization	$ 1,313,211	$ 1,313,211	$ 1,313,211

Kosmos Energy, Ltd.

Kosmos Energy is issuing 33,000,000 shares at an offer price of $18 per share. Kosmos Energy Ltd is an independent oil and gas exploration and production company focused on under-explored regions in Africa. The company's current asset portfolio includes discoveries and partially de-risked exploration prospects offshore the Republic of Ghana, as well as exploration licenses onshore the Republic of Cameroon and offshore Morocco. Following its formation in 2003, the company acquired its current exploration licenses and established a new, major oil province in West Africa.

Corporate Reorganization. In the section "Corporate Reorganization", the company discloses information regarding the corporate reorganization that will take place in concurrence with the offering. According to the prospectus, Kosmos Energy Ltd. was formed for the purpose of

making the offering. With the corporate reorganization, all of the interests in Kosmos Energy Holdings will be exchanged for newly issued common shares of Kosmos Energy Ltd. and as a result Kosmos Energy Holdings will become wholly-owned by Kosmos Energy Ltd. The company's business will continue to be conducted through Kosmos Energy Holdings. Some generic information is provided regarding the internal transactions that will take place to give effect to the reorganization.

Capitalization. In the section "Capitalization", a table sets forth the company's capitalization as of December 31, 2010 on an actual basis, pro forma to give effect to the corporate reorganization and pro forma as adjusted for the effect of the offering. Thus, the effects connected to the corporate reorganization are disclosed separately.

	As of December 31, 2010		
	Actual	Pro Forma to Give Effect to our Corporate Reorganization(1)	Pro Forma as Adjusted for the Effect of this Offering(1)(2)
	(In thousands, except share and per share data)		
Cash and cash equivalents	$ 100,415	$ 100,415	$ 653,275
Restricted cash	112,000	112,000	112,000
Total cash	$ 212,415	$ 212,415	$ 765,275
Current maturities of long-term debt	$ 245,000	$ 245,000	$ 245,000
Long-term debt	800,000	800,000	800,000
Total debt	1,045,000	1,045,000	1,045,000
Series A Convertible Preferred Units; 30,000,000 units outstanding, actual	383,246	—	—
Series B Convertible Preferred Units; 20,000,000 units outstanding, actual	568,163	—	—
Series C Convertible Preferred Units; 884,956 units outstanding, actual	27,097	—	—
Total Convertible Preferred Units	978,506	—	—
Common units; 19,069,662 units outstanding, actual	516	—	—
Common shares, $0.01 par value per share; 341,176,471 shares issued and outstanding, pro forma to give effect to our corporate reorganization(3); 374,176,471 shares issued and outstanding, pro forma as adjusted for the effect of this offering(4)	—	3,412	3,742
Additional paid-in capital	—	975,610	1,528,140
Deficit accumulated during development stage/Retained deficit	(615,515)	(615,515)	(615,515)
Accumulated other comprehensive income (loss)	588	588	588
Total unit holdings/shareholders' equity	(614,411)	364,095	916,955
Total capitalization	$ 1,409,095	$ 1,409,095	$ 1,961,955

Midstates Petroleum Company, Inc.

Midstates Petroleum Company, Inc. is issuing 18,000,000 shares at a final offer price of $13 per share. Midstates Petroleum Company, Inc. is an independent exploration and production company focused on the application of modern drilling and completion techniques to oil-prone

resources in previously discovered yet underdeveloped hydrocarbon trends. The company was founded in 1993 to focus on oilfields in the Upper Gulf Coast Tertiary trend onshore in central Louisiana. According to the prospectus summary, the company was created for the purpose of the offering.

Corporate Reorganization. Following the completion of a corporate reorganization that will occur concurrently with the closing of this offering, Midstates Petroleum Company, Inc. will directly own all of the outstanding membership interests in Midstates Petroleum Company LLC. The company's business will continue to be conducted through Midstates Petroleum Company LLC, as a direct, wholly owned subsidiary of Midstates Petroleum Company, Inc. The individual transactions that comprise the corporate reorganization are described in detail.

Capitalization. In the section "Capitalization", the prospectus provides the cash and cash equivalents and capitalization of Midstates Petroleum Holdings LLC and Midstates Petroleum Company, Inc. as of December 31, 2011, on an actual basis as well as on an as adjusted basis to give effect to the corporate reorganization. In this case, the adjusted capitalization isolates the effect of the corporate reorganization. The effects of the use of proceeds are show separately in the column "as further adjusted".

	As of December 31, 2011		
	Actual	As Adjusted	As Further Adjusted
		(in thousands)	
Cash and cash equivalents (1)	$ 7,344	$ 7,344	$ 7,344
Long-term debt, including current maturities:			
Revolving credit facility (2)	234,800	234,800	19,240
Total long-term debt (3)	234,800	234,800	19,240
Members' equity / stockholders' equity:			
Members' equity	285,502	—	—
Common stock, $0.01 par value; no shares authorized, issued and outstanding (actual); 300,000,000 shares authorized (as adjusted and as further adjusted); 47,634,353 shares issued and outstanding (as adjusted); 65,634,353 shares issued and outstanding (as further adjusted) (4)	—	476	656
Preferred stock, $0.01 par value; no shares authorized (actual); 50,000,000 shares authorized (as adjusted and as further adjusted); no shares issued and outstanding	—	—	—
Additional paid-in capital	—	285,026	500,406
Retained earnings (accumulated loss)	—	—	—
Total members' / stockholders' equity	285,502	285,502	501,062
Total capitalization	$ 520,302	$ 520,302	$ 520,302

McCormick & Schmick's Seafood Restaurants, Inc.

McCormick & Schmick's Seafood Restaurants, Inc. is issuing 6,000,000 shares at a final offer price of $12 per share. McCormick & Schmick's is a seafood restaurant operator in the affordable upscale dining segment. At the time of the IPO, the company owns 51 restaurants in 22 states. The target customer base is comprised of men and women, primarily ages 30 to 60, typically college-educated and in the middle to upper-middle income brackets. In the prospectus summary, an overview of the company's financial results is provided. In 2003, McCormick & Schmick's had revenues for $196.7 million and a net loss of $3.2 million. According to the company, the loss in 2003 was due primarily to a write-off of $2.3 million in deferred loan costs, a $1.5 million charge related to the impairment of one of the restaurants and a $1.2 million expense to settle a California labor dispute. Also contributing to the net loss were expenses of $2.6 million related to management

fees and non-compete payments, which are to be terminated in connection with the initial public offering.

Corporate Reorganization. In connection with the offering, McCormick & Schmick's Seafood Restaurants plans to actuate a corporate reorganization, whereby the issuing company will be the successor to McCormick & Schmick Holdings LLC, the current holding company, following a reorganization merger that will take place before the completion of the offering.

The disclosure concerning the corporate reorganization is contained in the "Corporate Reorganization" subsection of "Certain Relationships and Related Party Transactions". Several other references are made to the corporate reorganization throughout the prospectus. The disclosure in the "Corporate Reorganization" subsection includes detailed textual information regarding the allocation of the newly formed entity's shares according to the units (Class A, B or C) owned by the respective shareholders. The reorganization will take place through a series of transactions, which are as follows:

- The current parent holding company, McCormick & Schmick Holdings LLC, that indirectly owns all of the entities through which the IPO company operates its business, will be merged into a newly formed, wholly owned corporation named "McCormick & Schmick's Seafood Restaurants, Inc." This corporation will be the surviving corporation of the merger, which will be effective immediately prior to the closing of the offering.
- An aggregate of 7,782,349 shares of the common stock will be issued in the merger to existing holders of units in McCormick & Schmick Holdings LLC.

Furthermore, the subsection includes information related to the termination of certain agreements with the current principal equity holders and the founders, including the consequent cash payment that will be made to these parties.

Capitalization. In the section "Capitalization", the prospectus contains a table which gives pro forma effect to the corporate reorganization. The effect of the corporate reorganization is presented separately.

	As of March 27, 2004		
	Actual	Pro Forma	Pro Forma As Adjusted
		($ in thousands)	
Cash and cash equivalents	$ 2,404	$ 2,404	$ 2,404
Revolving credit facility and capital lease obligations, including current portion	$ 51,954	$ 51,954	$ 17,482
Mandatorily redeemable preferred stock	24,149	24,149	—
Stockholders' equity:			
LLC units	62,861	—	—
Preferred stock, $0.001 par value: 15,000,000 shares authorized, no shares issued and outstanding	—	—	—
Common stock, $0.001 par value: 120,000,000 shares authorized, 7,782,349 shares issued and outstanding, pro forma; 13,782,349 shares issued and outstanding, pro forma as adjusted	—	8	14
Additional paid-in capital	—	62,853	128,007
Unearned compensation	(39)	(39)	(39)
Retained earnings (accumulated deficit)	(3,174)	(3,174)	(9,713)
Interest rate swap	(384)	(384)	(384)
Total stockholders' equity	59,264	59,264	117,885
Total capitalization	$ 135,367	$ 135,367	$ 135,367

Pre-IPO M&A

Disclosure regarding recently undertaken M&A transactions is typically contained in the notes to the financial statements[6]. The content of the note describing the M&A is flexible and varies from company to company. The most typical elements that comprise the disclosure in the notes are the description of the acquisition (consummation date, percentage of ownership acquired, business of the acquired company) and the allocation of the purchase price (in textual or tabular format). Elements that appear only in some cases are the sources of financing and a detailed description of the intangible assets acquired. It is interesting to note that the company that recognize the greatest amount of goodwill (Dresser-Rand Group and Surgery Partners) also provide more extensive disclosure in comparison to the other companies.

The case studies are presented as follows: the disclosure related to the M&A that is provided in the prospectus is presented according to the section of the prospectus in which it is contained.

Dresser-Rand Group, Inc.

Dresser-Rand Group is a global supplier of rotating equipment solutions to the oil, gas, petrochemical and process industries. Dresser-Rand Group's services and products are used for a wide range of applications, including oil and gas production, high-pressure field injection and enhanced oil recovery, pipelines, refinery processes, natural gas processing, and petrochemical production. The group's client base consists of most major and independent oil and gas producers and distributors worldwide, national oil and gas companies, and chemical and industrial companies. Some of the group's clients are Royal Dutch Shell, Exxon Mobil, BP, Statoil, Chevron, Petrobras, Pemex, PDVSA, Conoco, Lukoil, Marathon and Dow Chemical. Dresser-Rand operates globally

[6] Unless otherwise indicated, values are expressed in thousands.

with manufacturing facilities in the United States, France, Germany, Norway, India and Brazil, and has 24 service and support centers worldwide.

The prospectus summary highlights the following financial data: for the three months ended March 31, 2004 and March 31, 2005, Dresser-Rand generated net income of $3.3 million and net loss of $4.0 million, respectively, and EBITDA of $11.1 million and $25.5 million, respectively. For the year ended December 31, 2003, the period from January 1, 2004 through October 29, 2004 and the period from October 30, 2004 through December 31, 2004, Dresser-Rand generated net income of $20.4 million, $42.2 million and $7.2 million, respectively, and EBITDA of $59.0 million, $73.7 million and $40.4 million, respectively.

The selective pursuit of strategic acquisitions is counted among the company's chief business strategies. No other information is provided with regard to recent acquisitions, or to the specific goal that the company tries to achieve through its acquisition strategy.

With its IPO, Dresser-Rand, Inc. is offering 27,000,000 shares at an offer price of $21 per share.

The Transactions. Dresser-Rand's IPO prospectus contains a separate section entitled "The Transactions" which discloses information regarding recent acquisition transactions. The information is divided into subsections. In the subsection "The Acquisition", the company first describes the acquisition. On August 25, 2004, Dresser-Rand Holdings, LLC entered into an equity purchase agreement with Ingersoll-Rand to purchase all of the equity interests in the Dresser-Rand Entities (Dresser-Rand Canada and Dresser-Rand GmbH) for approximately $1.13 billion. The following three paragraphs provide a detailed disclosure of the determination of the post-closure purchase price adjustments. The subsection "The Equity Purchase Agreement" contains six paragraphs of disclosure regarding the content of the agreement, particularly in relation to the indemnification for losses connected to specified events. An additional paragraph is dedicated to the ancillary agreements between the buyer and the seller. In the subsection "The Financing", the sources of financing for the transaction are disclosed in detail and are illustrated in a table as follows, highlighting the intended use for each source of funds:

Sources	(In millions)	Uses	
Senior secured credit facility:(1)		Purchase of equity interests of the Dresser-Rand Entities(3)	$ 1,125.1
Revolving credit facility(2)	$ 5.0		
Term Loan B	395.0	Cash	91.4
Senior subordinated notes	420.0	Existing indebtedness	2.9
Existing indebtedness	2.9	Financing fees and expenses	33.5
Equity invested by First Reserve	430.0		
Total Sources of Funds	$ 1,252.9	Total Uses of Funds	$ 1,252.9

Index to Financial Statements. The balance sheets presented in the index to financial statements contain two years of audited financial data for the years ended 2003 (“Predecessor”) and 2004 (“Successor”). Between these two years, the amount of recorded goodwill increased by $413,116. Most of the increase in goodwill is attributable to the acquisition of Dresser-Rand Canada and Dresser-Rand GmbH already described in the section “The Transactions”.

In the notes to the financial statements, the section “Basis of Presentation” provides new details in connection with the acquisition of the Dresser-Rand Entities. The allocation of the purchase price is illustrated by means of a table comprising 18 lines:

		(In thousands of dollars)
Assets acquired:		
Accounts receivable, net	$	193,944
Accounts receivable, other		32,863
Inventories		173,313
Prepaid expenses and other current assets		14,387
Property, plant and equipment		225,654
Goodwill		408,424
Intangible assets		490,519
Other assets		14,156
Total assets acquired		1,553,260
Liabilities assumed:		
Accounts payable		94,898
Other current liabilities		159,984
Short term loans		2,731
Tax liabilities		44,920
Other non-current liabilities		125,579
Total liabilities assumed		428,112
Cash paid for Acquisition	$	1,125,148

Following the disclosure of the purchase price allocation, the prospectus provides a qualitative description of the goodwill recorded as a consequence of the transaction. Goodwill is related to the company’s global presence, proven customer service capabilities, and knowledgeable assembled workforce comprised of various executives, managers, and sales and production personnel. Further detail concerning the intangible assets acquired is provided in the last paragraph, which describes how the purchase price was allocated to intangible assets and which methods were used to calculate their fair values and useful lives.

Parsons Corporation

Parsons Corporation is a provider of technology-driven solutions in the defense, intelligence and critical infrastructure markets. The company provides technical design and engineering services as well as software and operates in the areas of cybersecurity, intelligence, defense, military training, connected communities, physical infrastructure and mobility solutions. Parsons Corporation’s two reporting segments are Federal Solutions and Critical Infrastructure, with

revenue contribution of 41.5% and 58.5%, respectively, and Adjusted EBITDA contribution of 49.9% and 42.6%, respectively, for fiscal year 2018, according to the prospectus summary.

a) Federal Solutions is a high-end services and technology provider to the U.S. government. The company provides advanced technologies, including cybersecurity, missile defense systems, military training, subsurface munitions detection, military facility modernization, logistics support, chemical weapon remediation and engineering services.
b) Critical Infrastructure provides integrated design and engineering services for complex physical and digital infrastructure.

With its IPO, Parsons Corporation is issuing 18,518,500 shares at an offer price of $27 per share.

Index to Financial Statements. The prospectus includes two years of audited financial statement data for the years ended 2017 and 2018. For the year 2018, pro forma information is also provided. From the fiscal year 2017 to the year 2018 goodwill increases by approximately $240.000. The increase in goodwill is entirely attributable to the acquisition of Polaris Alpha in 2018. Information regarding the acquisition is disclosed in the notes to the consolidated financial statements.

On May 31, 2018, the Company acquired a 100% ownership interest in Polaris Alpha, a privately owned, advanced technology-focused provider of innovative mission solutions for complex defense, intelligence, and security customers, as well as other U.S. federal government customers. The purchase price amounted to $489.1 million. In order to fund the transaction, the company borrowed $260 million. Details regarding the acquisition costs are provided, including the amount and their recognition in the financial statements. In connection with the acquisition, the company recognized $6.2 million of acquisition related expenses in “Indirect, general and administrative expense” in the consolidated statements of income (loss) for the period ended December 31, 2018. A brief description of the expected benefits following the acquisition is also provided. According to the issuing company, Polaris Alpha enhances the company’s artificial intelligence and data analytics expertise with new technologies and solutions. Customers of both companies will benefit from existing, complementary technologies and increased scale. The purchase price allocation is illustrated in a table comprised of 14 lines of detail:

	Polaris Alpha
Cash and cash equivalents	$ 7,914
Accounts receivable	29,688
Contract assets	35,229
Prepaid expenses and other current assets	9,295
Property and equipment	9,024
Goodwill	243,471
Intangible assets	199,520
Other noncurrent assets	2,203
Accounts payable	(13,942)
Accrued expenses and other current liabilities	(26,419)
Contract liabilties	(3,529)
Deferred tax liabilities	(2,231)
Other long-term liabilities	(1,146)
Net assets acquired	$ 489,077

The amount allocated to each acquired intangible is disclosed in an additional table:

	Gross Carrying Amount	Amortization Period (in years)
Developed technology	$84,900	4
Customer relationships	76,000	8
Backlog	34,900	2
Trade name	3,600	1
Leases	120	6

A brief qualitative explanation of goodwill is provided as follows: goodwill is attributed to the Parsons Federal reporting unit and represents synergies expected to be realized from the business combination.

Phreesia, Inc.

Phreesia, Inc. is a provider of comprehensive solutions that transform the healthcare experience by engaging patients in their care and enabling healthcare provider organizations to optimize operational efficiency, improve profitability and enhance clinical care. Through the Phreesia Platform, the company offers healthcare provider organizations a suite of solutions to manage the patient intake process and an integrated payments solution for secure processing of patient payments. The platform also provides life sciences companies with an engagement channel for targeted and direct communication with patients. The Phreesia Platform manages the end-to-end patient intake process and encompasses a comprehensive range of services, including initial patient contact, registration, appointment scheduling, payments and post-appointment patient surveys. Clients range from single-specialty practices to large, multi-specialty groups and large health systems. The life sciences business additionally serves clients in the pharmaceutical, biotechnology and medical device industries.

Phreesia, Inc. is issuing 7,812,500 shares at an offer price of $18 per share.

Index to Financial Statements. Phreesia, Inc., is qualified as an EGC and is therefore exempted from certain disclosure requirements related to the number of years of audited financial data that must be provided in the prospectus for recently acquired businesses. The balance sheet

contains two years of audited financial data for Januray 31, 2018 and 2019. From 2018 to 2019, an increase in goodwill amounting to $250,190 is recorded. The change in goodwill is entirely attributable to the acquisition of Vital Score, Inc. The details of the transaction are disclosed in the notes to the financial statements.

On December 4, 2018, the company entered into an asset purchase agreement with Vital Score, Inc. to acquire all of the assets, and assumed certain of the liabilities, of Vital Score. According to the company, the acquisition of Vital Score expanded the company's clinical and patient activation offerings and deepened its capabilities in motivational science. Details regarding the purchase price and its funding are extensive and include the composition of the consideration, which is comprised of a cash consideration and shares of common stock valued at $8.03 per share. A table comprising seven line items illustrates the allocation of the purchase price:

Cash consideration	$ 1,540,470
Common stock issued (20,164 shares at $8.03 per share)	161,720
Total fair value of acquisition consideration	$ 1,702,190

Property and equipment	$ 5,000
Acquired technology	490,000
Customer relationships	980,000
Goodwill	250,190
Total assets acquired	$1,725,190
Accounts payable	(23,000)
Total purchase price	$1,702,190

Further details regarding the assets acquired is provided in the paragraph below the table, which identifies the assets acquired and specifies the useful lives. The methods used to determine the fair values of both the tangible and intangible assets are also described. A brief qualitative explanation of the goodwill is provided as follows: the company believes the goodwill related to the acquisition was a result of providing the company a complementary service offering that will enable the company to leverage its services with existing and new clients. Finally, certain information concerning the financial data of Vital Score is disclosed. This type of disclosure concerns the composition of Vital Score's revenue and the method used to calculate it. The financial data of Vital Score is disclosed as follows: for the period from December 4, 2018 (date of acquisition) to January 31, 2019, the results of Vital Score are included in the company's results. For the year ended January 31, 2018, the unaudited revenues and unaudited net loss of Vital Score were approximately $250,000 and $455,000, respectively. For the period from February 1, 2018 through December 4, 2018, the unaudited revenues and unaudited net loss of Vital Score were approximately $100,000 and $600,000, respectively.

Surgery Partners, Inc.

Surgery Partners, Inc. is offering 14,285,000 shares at an offer price of $19 per share. Surgery Partners is a healthcare services company providing surgical services in partnership with

physicians in 99 surgical facilities comprised of 94 ambulatory surgery centers and five surgical hospitals across 28 states. The company also provides ancillary services comprised of a diagnostic laboratory, multi-specialty physician practices, urgent care facilities, anesthesia services, optical services and specialty pharmacy services. The prospectus summary contains an initial disclosure regarding the recent acquisition of Symbion in November 2014. This disclosure explains in detail the expected synergies and cost savings that Surgery Partners expects to realize following the acquisition of Symbion. Symbion is a private owner and operator of 55 surgical facilities. According to the company, the acquisition has further diversified its geographic footprint, surgical specialty mix and ancillary network, while enhancing its scale and providing significant cost and revenue synergy opportunities. The company has been actively executing its integration plan to realize these synergies, which include reductions in corporate overhead, supply chain rationalization, enhanced physician engagement, improved payor contracting, and revenue synergies. In this section, the prospectus already provides pro forma effects of the acquisition on the percentage of revenues derived from ancillary services. According to the prospectus summary, among the company's core growth strategies is the pursuit of strategic acquisitions. In this paragraph, further details regarding the Symbion acquisition are disclosed. The approximate amount of the cost and revenue synergies realized since the acquisition are approximately $8 million, primarily through reductions in head count, office closures and reductions to prices paid for supplies through volume discounts. The company estimates that these synergies will ultimately exceed $30 million in the aggregate in the next two to three fiscal years. The prospectus summary includes a first overview of the company's financial results. For the six months ended June 30, 2015, Surgical Partners' revenue was $457.0 million, compared to revenue of $147.3 million for the same period during 2014. For the six months ended June 30, 2015, the company experienced a net loss of $12.2 million as compared to $4.7 million for the same period during 2014. Finally, the prospectus summary contains the subsection "Acquisition of Symbion". This section includes information regarding the purchase price for the acquisition ($792.0 million) and its funding through cash for $300.1 million and the assuming of outstanding indebtedness from Symbion for approximately $472.4 million.

Index to Financial Statements. Surgery Partners, Inc. is an Emerging Growth Company (EGC) and can therefore benefit from certain exemptions regarding the disclosure of audited financial information of acquired businesses in the prospectus. The prospectus provides the balance sheets of Surgery Partners, Inc. as of June 30,2015 and May 31,2015 as well as the consolidated balance sheets for Surgery Center Holdings, Inc. for the years ended 2013 and 2014. From 2013 to 2014, an increase in goodwill of $959,232 is recorded. Most of the increase in goodwill is attributed

to the acquisition of Symbion in 2014, which is described in detail in the notes to the consolidated financial statements.

In the note “Acquisition of Symbion” contained in the section “Index to Financial Statements”, the company provides new details regarding the merger transaction. The first five paragraphs contain information regarding the transaction in general and additional details concerning the sources of financing. On June 13, 2014, the Company, through its wholly-owned subsidiary, SCH Acquisition Corp., entered into an Agreement and Plan of Merger with Symbion Holdings Corporation. SCH merged with and into Symbion, with Symbion being the surviving corporation in the merger. The sixth paragraph contains information regarding the acquisition expenses and their exact allocation to the income statement and balance sheet. The purchase price allocation is illustrated in a table comprising 23 lines of detail:

	November 3, 2014
Cash consideration	$ 300,098
Acquisition consideration payable	16,768
Fair value of noncontrolling interests	395,663
Fair value of Symbion	712,529
Net assets acquired	
Cash	40,374
Accounts receivable, net	79,830
Inventories	18,389
Prepaid expenses and other current assets	9,876
Property and equipment	153,179
Investments in and advances to affiliates	32,728
Intangible assets	31,534
Restricted invested assets	316
Other long-term assets	6,239
Accounts payable	(20,419)
Accrued payroll and benefits	(14,300)
Other current liabilities	(44,272)
Current maturities of long-term debt	(83,805)
Long-term debt, less current maturities	(376,395)
Long-term deferred tax liabilities	(17,895)
Other long-term liabilities	(60,500)
Net assets acquired	(245,121)
Excess of fair value over identifiable net assets acquired	$ 957,650

According to the prospectus, the goodwill was allocated to the company’s Surgical Facility Services operating segment. The following paragraph provides further information regarding the calculation method of the fair value attributable to noncontrolling interests. In addition to the pro forma effects of the Symbion acquisition on net revenues and net (loss) income, the revenues and net income included in the year ended December 2014 associated with the Symbion acquisition are also disclosed as represented in the table below:

	Year Ended December 31, 2014
Net revenues	$ 103,979
Net income	21,018
Less: net income attributable to noncontrolling interests	(10,439)
Net loss attributable to Surgery Center Holdings, Inc.	$ 10,579

Evoqua Water Technologies Corp.

Evoqua Water Technologies Corp. is a provider of mission critical water treatment solutions, offering services, systems and technologies. According to the prospectus, with over 200,000 installations worldwide, the group holds leading positions in the industrial, commercial and municipal water treatment markets in North America. The group serves its customers through three segments: Industrial, Municipal and Products. It offers solutions across the entire water cycle in order to provide water that can be used for a wide variety of industrial, commercial and municipal applications. After the water is used, the group performs treatments through the removal of impurities so that it can be discharged safely back into the environment or reused for industrial, commercial or municipal applications. Some financial information is highlighted in the prospectus summary. For the fiscal year ended September 30, 2016, the group generated revenue, net income and adjusted EBITDA of $1.1 billion, $13.0 million and $160.1 million, respectively. With its IPO, Evoqua is issuing 27,777,777 shares at a final offer price of $18 per share.

Basis of Presentation. In the section "Basis of Presentation", the prospectus provides detailed information regarding the acquisition. On January 15, 2014, Evoqua acquired all of the outstanding shares of Siemens Water Technologies, a group of legal entity businesses formerly owned by Siemens Aktiengesellschaft. The acquisition is referred to as the "AEA Acquisition". The stock purchase price, net of cash received, was approximately $730.6 million.

Index to Financial Statements. The index to financial statements contains the balance sheet of EWT Holdings I Corp. for the periods ended September 30, 2016 and 2016. Between these two years, an increase in goodwill amounting to $154,060 is recorded. Most of the change in goodwill is attributed to the acquisition of Siemens Water Technologies. In the note "Acquisitions and Divestitures", the prospectus discloses more detailed information regarding the acquisition of Siemens Water Technologies from Siemens AG. The first paragraph concerns the purchase price and its funding. The purchase price totaled $730,577 thousand, net of cash received and was funded using the proceeds from a $560,400 thousand debt placement as well as an equity investment. The equity was raised through the sale of 99,743 million shares of stock in the parent holding company, EWT Holdings I Corp, priced at $3.71 per share. The shares were sold at a 4.5% discount for total net proceeds of $353,350. The allocation of the purchase price resulted in a goodwill value of

$122,778 thuosand. According to the prospectus, the goodwill is attributable to the assembled workforce and expected synergies among the acquired businesses. The detail of the allocation is provided in a table comprising seven lines of detail:

Working capital, net of $167,568 cash acquired	$ 122,124
Property, plant and equipment	238,447
Identified intangible assets	285,716
Goodwill	122,778
Other non-current assets	26,665
Other non-current liabilities	(65,153)
Total	$ 730,577

Disclosure regarding the acquisition costs concerns their amount and recognition. The company recognized $10,121 in costs included in General and administrative expenses from the acquisition and $25,083 in capitalized financing fees. Finally, the note provides pro forma information for the fiscal years 2015 and 2016 regarding the acquisition of Siemens Water Technologies. The table includes the pro forma effect of the acquisition on total revenues and on net income.

Pre-IPO M&A and Reorganization

Companies that performed both an M&A and a corporate reorganization prior to or in connection with the IPO are presented in this section. The final prospectuses of these companies provide information regarding both the M&A and the corporate reorganization. The amount of information provided seems to be related to the magnitude of the transaction. For example, PQ Holdings' business combination with Eco Services was a complex transaction of considerable magnitude (with a total consideration paid of $1.150.413). Consequently, the disclosure provided in relation to the transaction is extensive and detailed.

Charah Solutions

Charah Solutions is a provider of environmental and maintenance services to the power generation industry. The company provides services at coal-fired and nuclear power generation sites nationwide. The services provided include coal ash management and recycling, environmental remediation and outage maintenance services, as well as the design and implementation of solutions for complex environmental projects. Charah Solutions provides its services through two segments Environmental Solutions and Maintenance and Technical Services. The prospectus summary highlights the following financial data. For the fiscal year ended December 31, 2017, the company generated revenue, net income and Adjusted EBITDA of $430.4 million, $12.8 million and $76.0

million, respectively. For the three months ended March 31, 2018, the company generated revenue, net income and Adjusted EBITDA of $155.5 million, $1.2 million and $17.4 million, respectively.

With its IPO, Charah Solutions is issuing 5,294,115 shares at an initial offer price of $12 per share.

Corporate Reorganization. The section "Corporate Reorganization" of the prospectus describes the corporate reorganization that will take place following the offering. Following the offering, Charah Solutions will be a holding company and its only material assets will consist of membership interests in Charah Management and Allied Power Holdings. Through the ownership of Charah Management and Allied Power Holdings, the issuing company will own the outstanding equity interests in Charah, LLC and Allied Power Management, LLC, the subsidiaries through which it will operate its business. The second and third paragraphs contain detailed information regarding the number of shares of common stock that will be exchanged as consideration for the interests in Charah Management and Allied Power Holdings. The fourth paragraph describes the effect of the transaction on the ownership base of the issuing company, listing the percentage of shares belonging to each existing owner. Furthermore, a diagram illustrating the simplified ownership structure prior to and immediately following the offering and the related reorganization transactions is provided at the end of the section "Corporate Reorganization".

Capitalization. In the section "Capitalization", a table sets forth the cash and cash equivalents and capitalization as of March 31, 2018 on an actual basis; and as adjusted to give effect to (i) the corporate reorganization (ii) the initial public offering, and (iii) the application of net proceeds from the offering as set forth under "Use of Proceeds." Thus, the effects of the corporate reorganization on the capitalization are not isolated from those of the use of proceeds.

	As of March 31, 2018	
	Actual	As Adjusted
	(in thousands, except number of shares and par value)	
Cash and cash equivalents	$ 9,283	$ 20,648
Long-term debt, including current portion:		
Credit Facility	$ —	$ —
Term Loan	$ 234,410	$ 194,410
Equipment Financing Facilities	$ 20,823	$ 20,823
Total debt	$ 255,233	$ 215,233
Members'/Stockholders' equity:		
Members' equity	$ 29,515	$ —
Preferred stock, $0.01 par value; no shares authorized, issued or outstanding (actual), 50,000,000 shares authorized, no shares issued and outstanding (as adjusted)	—	—
Common stock, $0.01 par value; no shares authorized, issued or outstanding (actual); 200,000,000 shares authorized, 29,946,471 shares issued and outstanding (as adjusted)	—	299
Additional paid-in capital	—	80,880
Retained earnings	19,122	19,122
Non-controlling interest	582	582
Total members'/stockholders' equity	$ 49,219	$ 100,883
Total capitalization	$ 304,452	$ 316,116

Index to Financial Statements. The Index to the Consolidated Financial Statements includes financial statements containing two years of audited financial data both for Charah

Solutions, Inc., for the period ended in February 2018; and for the combined balance sheets of Charah, LLC and Allied Power Management, LLC ("BCP") as of December 31, 2017 and 2016. The fiscal year ending on December 2016 is indicated as the "Predecessor" period, with no goodwill present, while the fiscal year ending on December 2017 is indicated as the "Successor" period. From 2016 to 2017, goodwill increases from zero to $73,468 as a result of a business combination.

In the notes to the consolidated financial statements, the prospectus discloses information regarding a business combination with BCP, a previously unrelated third party, pursuant to which BCP acquired a 76% equity position in Charah Management LLC. The transaction took place on January 13, 2017. The allocation of the purchase price is shown in a table comprised of nine lines of detail:

Net working capital	$ 26,704
Net nonoperating assets/liabilities	9,679
Property, plant and equipment	107,876
Rail easement	110
Purchase option liability	(29,883)
Trade name intangible assets	34,330
Customer relationship intangible assets	78,200
Goodwill	73,468
Total purchase price	$300,484

Goodwill arising from the transaction is attributed for approximately $60 million to the Environmental Solutions segment and the remainder to the Maintenance and Technical Services segment. The reasons underlying the existence of goodwill are not mentioned. No further detail on the fair value of the assets acquired is provided.

Prestige Brands Holdings, Inc.

Prestige Brands Holding, Inc. is selling 28,000,000 shares at a price of $16 per share. The group sells brand name over-the-counter drug, household cleaning and personal care products. The products are sold through multiple channels, including mass merchants and drug, grocery, dollar and club stores. The operating model allows the company to focus its internal resources on marketing, sales, customer service and product development. The operating elements are outsourced to third-party providers. Prestige Holdings has grown its brand portfolio by acquiring strong and well-recognized brands from larger consumer products and pharmaceutical companies, as well as other brands from smaller private companies.

The prospectus summary contains the subsection "Our History", where the company provides initial information about two recent acquisitions. In April 2004, Prestige Holdings acquired Bonita Bay Holdings, Inc. Bonita Bay was the parent holding company of Prestige Brands International, Inc. and conducted its business under the "Prestige" name. After the completion of this acquisition,

Prestige Holdings began to conduct business under the "Prestige" name. The Bonita Bay portfolio included four of the Group's major brands. According to the prospectus, since the Bonita Bay acquisition, the Group has successfully integrated its operations and realized approximately $12 million of annual cost savings, exceeding the initial estimates. In October 2004, Prestige Holdings acquired the rights to the Little Remedies brands through the purchase of Vetco, Inc. Vetco is engaged in the development, distribution and marketing of pediatric over-the-counter healthcare products, primarily marketed under the Little Remedies brand name.

The Summary Historical Financial Data contains the financial data of both Prestige and Predecessor, as well as Bonita Bay Holdings, Inc.

Reorganization as a Corporation. The section "Reorganization as a Corporation" describes the transactions through which Prestige Brands Holdings, Inc. became the direct parent of Prestige International LLC, pursuant to a reorganization that took place prior to the completion of the offering. This section of the prospectus contains detailed information pertaining to the exchange agreement between Prestige Inc., Prestige LLC and each holder of common units of Prestige LLC, by virtue of which Prestige LLC to became a wholly owned subsidiary of Prestige Inc.

Capitalization. In the section "Capitalization", the company provides a detailed pro forma representation of the cash and cash equivalents and capitalization in order to give effect to the reorganization as a corporation, as well as to the receipt of the estimated net proceeds from the IPO, and the application of the net proceeds as described under "Use of Proceeds." Thus, the effect of the corporate reorganization on the capitalization is not provided separately.

	As of December 31, 2004	
	Actual	Pro Forma, As Adjusted
		(unaudited)
	(dollars in thousands)	
Cash and cash equivalents	$ 6,754	$ —
Long-term debt, including current portion:		
Senior credit facility:		
Revolving credit facility	$ —	$ 4,954
Tranche B term loan facility	370,293	370,293
Tranche C term loan facility	100,000	—
$9^{1}/_{4}$% notes	210,000	126,000
Total long-term debt	680,293	501,247
Members'/Stockholders' (deficit) equity:		
Senior preferred units, 22,500 units issued and outstanding, actual; no units issued and outstanding, pro forma, as adjusted	17,768	—
Class B preferred units, 162,864 units issued and outstanding, actual; no units issued and outstanding, pro forma, as adjusted	155,283	—
Common units, 58,109,786 units issued and outstanding, actual; no units issued and outstanding, pro forma, as adjusted	5,611	—
Preferred stock, par value $0.01 per share, no shares authorized, issued and outstanding, actual; 5,000,000 shares authorized and no shares issued and outstanding, pro forma, as adjusted	—	—
Common stock, par value $0.01 per share, no shares authorized, issued and outstanding, actual; 250,000,000 shares authorized and 50,000,000 shares issued and outstanding, pro forma, as adjusted	—	500
Additional paid-in capital	4,871	393,782
Retained earnings	15,473	(21,611)
Total members'/stockholders' equity	199,006	372,671

Index to Financial Statements. The index to financial statements contains the consolidated financial statements for Prestige International Holdings, LLC, The Spic and Span Company, Bonita Bay Holdings, Inc, and Vetco, Inc. The balance sheets of the two recently acquired companies (Bonita Bay and Vetco) contain two years of audited financial data and the interim period for the three months ended March 31, 2003 and 2004. In the consolidated balance sheet, an increase in goodwill amounting to $239,066 is recorded from 2002 to 2003.

The information regarding two recent acquisitions is disclosed in the notes to the financial statements. In addition to the corporate reorganization, Prestige Inc. completed two acquisitions of businesses. The first acquisition, the “Bonita Bay Acquisition”, was completed for a purchase price of approximately $561,266. The disclosure pertaining to this acquisition includes a table representing the sources of financing. The company also provides a breakdown of the purchase price, which includes cash of $380,677 paid to the selling shareholders, 94 Prestige Holdings Class B Preferred Units valued at an aggregate of $91 and 18,842 Prestige Holdings Common Units valued at an aggregate of $1, assumed debt and accrued interest which was retired of $176,918 and

acquisition costs of $3,579. The allocation of the purchase price is represented in the following table, which is comprised of nine line items:

	Bonita Bay
Cash	$ 4,304
Accounts receivable	13,121
Inventories	16,271
Prepaid expenses and other current assets	1,391
Property, plant and equipment	2,982
Goodwill	217,860
Intangible assets	352,460
Accounts payable and accrued liabilities	(27,745)
Long-term debt	(172,898)
Deferred income taxes	(28,520)
	$ 379,226

Further detail regarding the fair value and useful life of acquired intangibles is provided in the text below the table. The disclosure pertaining to the Vetco acquisition is the same as the one provided for the Bonita Bay acquisition. Finally, the company provides the pro forma unaudited results of the Company's operations, had the acquisitions occurred at an earlier date. The pro forma effects are shown for the net sales, income before taxes, and net income.

	Pro Forma Nine months ended December 31, 2004	Pro Forma Nine months ended December 31, 2003
	(unaudited)	(unaudited)
Net sales	$ 231,173	$ 219,035
Income before income taxes	$ 31,124	$ 32,331
Net income	$ 19,297	$ 20,278

Solera Holdings, Inc.

Solera Holdings, Inc. is a global provider of software and services to the automobile insurance claims processing industry. The company's customers include more than 900 automobile insurance companies, as well as collision repair facilities, independent assessors, and automotive recyclers. Solera is issuing 19,200,000 shares at an offer price of $16 per share.

The subsection "History" of the Prospectus Summary contains information regarding the 2006 acquisition of the Claims Services Group from ADP for approximately $1.0 billion. The sources of financing are listed as follows:

- borrowings under senior secured credit facility of approximately $714.6 million;
- borrowings under subordinated unsecured credit facility of approximately $95.2 million; and

- the sale of Class A common units and Class B preferred units to investment funds managed by GTCR, certain members of senior management and non-GTCR members of the board of directors for approximately $207.8 million.

Within this subsection, the prospectus provides information regarding the refinancing transactions connected to the acquisition. In conjunction with the offering, the company intends to refinance the credit facilities they entered into in connection with the Acquisition. The company lists the refinancing transactions in detail.

Corporate Reorganization. The section "Corporate Reorganization" is comprised of one paragraph of disclosure and it concerns the conversion from a limited liability company to a corporation. Further information is disclosed in the section "Capitalization", where the pro forma effect of the corporate reorganization on the capitalization is illustrated by means of a table.

Index to Financial Statements. The consolidated financial statements for Solera Holdings LLC and Claims Services Group are provided in the index to financial statements. Solera Holding's balance sheet contains data as of June 30, 2005 and 2006, as well as for the year ended 2006. Claims Services Group's balance sheet includes the data for the periods ended June 30, 2005 and 2006. Solera Holdings' consolidated financial statements show a significant increase in goodwill from 2005 to 2006. The amounts of goodwill in these two periods are, respectively, zero and $541,421. The increase in goodwill is attributed to the acquisition of the Claims Services Group.

In the notes to the financial statements, the allocation of the purchase price is illustrated in a table which is comprised of 12 line items:

Cash	$	78,128
Accounts receivable		62,010
Other assets		55,086
Property and equipment		38,094
Intangible assets:		
Software and database technology		239,200
Customer relationships		173,900
Trademarks		13,500
Accounts payable and other accrued liabilities		(93,989)
Tax-related liabilities		(72,407)
Minority share of net assets		(8,064)
Goodwill		517,117
Total	$	1,002,575

The intangible assets are identified separately and the company specifies the method by which the fair value was determined. The additional details regarding the intangible assets are provided in a table:

Description	Amount	Amortization Period
	(in millions)	(in years)
Software and database technology	$239.2	9
Customer relationships	$173.9	20
Trademarks	$13.5	4

Only a few details are disclosed regardingthe sources of financing, which are described as being a combination of common and preferred equity and debt financing.

PQ Group Holdings

PQ Holdings is issuing 29,000,000 shares at a final offer price of $17,50 per share. PQ Holdings is a global provider of catalysts, specialty materials and chemicals, and services that enable environmental improvements, enhance consumer products, and increase personal safety. The Group's products are mostly additives and catalysts. They are used principally in consumer products and in the automotive industry. The group has two reporting segments: environmental catalysts and services and performance materials and chemicals. For the year ended December 31, 2016, the group generated sales of $1,064.2 million and a net loss of $79.7 million.

PQ Holdings' prospectus does not contain a separate section for the corporate reorganization that occurred prior to the IPO. The reorganization was part of a business combination with Eco Services, and the disclosure thereof is provided in together with that of the business combination.

Index to Financial Statements. The prospectus contains audited consolidated balance sheets for PQ Group Holdings for the years ended 2015 and 2016. An unaudited interim balance sheet is provided for the period ended June 30, 2017. Furthermore, in relation to the acquisition of Eco Services, the prospectus also provides the consolidated statement of operations and the consolidated statement of comprehensive income for the period from inception of Eco Services (July 30, 2014) to the date of the consummation of the acquisition (December 31, 2014), in order to reflect the financial results of Eco Services on a stand-alone basis (indicated as the "Successor Period" in the prospectus).

In the notes to the financial statement, in the subsection "Basis of Presentation", the group provides disclosure on the acquisition of Eco Services from Solvay, which is also related to a corporate reorganization. On July 30, 2014, Eco Services Operations LLC, a newly formed company and certain investment funds affiliated with CCMP Capital Advisors, LLC, entered into an Asset Purchase Agreement with Solvay USA, Inc. for the sale of substantially all of the assets of the Eco Services business unit of Solvay's regeneration and virgin sulfuric acid production business operations in the United States. Prior to the Asset Purchase Agreement with Solvay, Eco operated

as a business unit within Solvay, which is an indirect, wholly owned subsidiary of Solvay SA, an international industrial group active in chemistry and headquartered in Brussels, Belgium. In relation to the acquisition of Eco Services, the prospectus also provides the financial statements prior to the 2014 Acquisition, which include amounts that have been taken from Solvay's financial statements using assumptions and allocations made by Solvay to depict Solvay's Eco business unit on a stand-alone basis (indicated as the "Predecessor Period" in the prospectus).

The next subsection is entitled "PQ Merger with Eco Services" and it provides new details regarding the business combination. According to the prospectus, the Eco Services acquisition resulted in a reorganization whereby the IPO company, PQ Holdings Inc., Eco Services, certain investment funds affiliated with CCMP, and certain other stockholders of PQ Holdings and Eco Services entered into an agreement pursuant to which the companies consummated a series of transactions to reorganize and combine the businesses of PQ Holdings and Eco Services under a new holding company, PQ Group Holdings Inc. The prospectus provides information related to the refinancing of existing credit facilities or PQ Holdings and Eco Services.

The 2014 partial acquisition of Eco Services resulted in an increase in goodwill amounting to $311,892. In the notes to the consolidated financial statements, the prospectus provides information regarding the purchase price, the costs related to the acquisition, and the sources of funds for the acquisition. The purchase price for Eco net of adjustments was $881,47. Acquisition costs amounted to $14,666 and are included in other operating expense, net in the Company's consolidated statement of operations for the Successor Period. The sources of funding for the acquisition are listed as follows: senior secured credit facilities for $500,000 plus $55,000, senior notes for $200,000, and an equity investment of $230,000 plus $9,885 in cash. The allocation of the purchase price is illustrated in a table comprised of 23 lines:

Total purchase price	$881,475
Recognized amounts of identifiable assets acquired and liabilities assumed:	
Receivables	$ 26,160
Other receivables	19,389
Inventories	13,297
Prepaid expenses	377
Property, plant and equipment	471,367
Intangibles, excluding goodwill	148,190
Other long-term assets	1,624
Fair value of assets acquired	680,404
Accounts payable	(20,908)
Other payables	(853)
Current portion of capital lease obligation	(236)
Accrued expenses	(8,710)
Accrued wages, salaries & employment benefits	(9,572)
Other current liabilities	(6,485)
Long-term portion of capital lease obligation	(1,185)
Environmental reserve	(4,783)
Supply contract obligation	(25,662)
Pension liability	(32,427)
Fair value of net assets acquired	569,583
Goodwill	311,892
Purchase price	$881,475

The presence of goodwill is explained as a result of the expected revenue of Eco Services, and the assembled workforce and several strategic benefits, including a comprehensive portfolio of brands. In addition to the table showing the allocation of the purchase price, the company provides a table showing the valuation of the intangible assets acquired and the related weighted-average amortization periods:

	Amount	Weighted-Average Expected Useful Life (in years)
Intangible assets subject to amortization:		
Customer relationships	$ 99,300	15
Technical know-how	24,990	14
Permits	9,100	5
Total intangible assets subject to amortization	133,390	
Tradename, not subject to amortization	14,800	Indefinite
Total	$148,190	

In another note to the financial statements, PQ Holdings provides disclosure related to the completion of the business combination with Eco Services in 2016. The acquisition of Eco Services was completed, giving rise to $958,527 of goodwill. The purchase price is broken down and illustrated in a table comprised of 17 lines of detail:

Total consideration, net of cash acquired	$2,689,941
Recognized amounts of identifiable assets acquired and liabilities assumed:	
Receivables	$ 161,110
Inventories	254,770
Prepaid and other current assets	19,295
Investments in affiliated companies	472,994
Property, plant and equipment	683,673
Other intangible assets	754,000
Other long-term assets	48,127
Fair value of assets acquired	2,393,969
Revolver, notes payable & current debt	(2,441)
Accounts payable	(93,222)
Accrued liabilities	(98,621)
Long-term debt	(20,470)
Deferred income taxes	(327,296)
Other long-term liabilities	(113,936)
Noncontrolling interest	(6,569)
Fair value of net assets acquired	1,731,414
Goodwill	958,527
	$2,689,941

The company discloses the consideration paid for the business combination ($1,777,740 of cash, $910,800 of equity in the acquired PQ Holdings entities and $1,401 of assumed stock awards of PQ Holdings). The acquisition costs amount to $1,583 and are included in other operating expense. According to the company, the method used to determine the fair value of the equity consideration was based on an estimated enterprise value using a market approach as of the date of the Business Combination reduced by borrowings to arrive at the fair value of equity. The goodwill is meant to represent the diverse range of industrial, consumer and governmental applications in which the company's products are sold. An additional table provides the valuation of the intangible assets acquired and the related weighted-average amortization periods:

	Amount	Weighted-Average Expected Useful Life (in years)
Intangible assets subject to amortization:		
Trademarks	$ 35,400	15.0
Technical know-how	189,300	20.0
Contracts	19,800	5.3
Customer relationships	268,700	10.6
In-process research and development	6,800	
Total intangible assets subject to amortization	520,000	
Tradenames, not subject to amortization	151,100	Indefinite
Trademarks, not subject to amortization	82,900	Indefinite
Total	$754,000	

Further information regarding the acquired inventories is provided in textual format. In one paragraph, the company describes the valuation used to assign a value to acquired inventories.

Finally, the notes to the consolidated financial statements contain the pro forma financial information giving effect to the business combination at an earlier date. The pro forma information is provided in both tabular and textual format and are explained in detail.

Black Knight Financial Services, Inc.

Black Knight Financial Services Inc. is issuing 18,000,000 shares at $24,50 per share. Black Knight Financial Services is a provider of integrated technology, workflow automation and data and analytics to the mortgage industry. According to the company, their solutions are utilized to support mortgage lending and servicing operations, analyze portfolios and properties, operate more efficiently, meet regulatory compliance requirements and mitigate risk.

The business is organized into two segments: Technology, which offers software and hosting solutions that support loan servicing, and Data and Analytics, which offers solutions to enhance and support the technology products in the mortgage, real estate and capital markets industries.

In the subsection "History" of the prospectus summary, the company provides disclosure about the reorganization that took place as a consequence of the acquisition of LPS. On January 2, 2014, the parent company of Black Knight Financial Services acquired LPS, and as a result, LPS became an indirect, wholly-owned subsidiary of the company. Following the acquisition, on January 3, 2014 the company underwent a series of reorganization transactions, which are listed in detail. As a result of the internal reorganization, BKFS Operating LLC owned substantially all of the former Technology, Data and Analytics segment of LPS and Commerce Velocity. Following the internal reorganization, the company issued, in the aggregate, 35.0% of the membership interests of BKFS Operating LLC. The entities to which the shares were issued are disclosed exhaustively. Further disclosure is provided for a second internal reorganization, by virtue of which Black Knight is now the sole member of Property Insight.

Corporate Structure and Reorganization. In the section "Corporate Structure and Reorganization", as well as in the Index to Financial Statements, the prospectus provides detailed information on the corporate structure as well as the reorganization transaction, providing both textual and tabular information to describe the reorganization and its effects on the corporate structure. An exhaustive list of the final effects of the reorganization is also provided. After completion of the "Offering Reorganization", the company will operate its business through BKFS Operating LLC and its subsidiaries. The company will have a sole managing member interest in BKFS Operating LLC, which will grant them the exclusive authority to manage, control and operate the business and affairs of BKFS Operating LLC and its subsidiaries, pursuant to the terms of an agreement of BKFS Operating LLC, referred to as the Amended and Restated Operating Agreement. The terms of the agreement are explained in detail. In the section "Index to Financial Statements" the prospectus provides further details on the effects of the corporate structure which will result as a consequence of the offering and of the internal reorganization, including information on the tax benefits that will be realized by holders of common stock in BKFS. A diagram

summarizing the anticipated organizational structure immediately after completion of the Offering Reorganization, including the offering,

Index to Financial Statements. The prospectus provides two years of audited financial data. There is an increase in goodwill amounting to $2.174.900 which is due to a series of business combinations that occurred during the reporting year prior to the offering. The first business combination is connected with the reorganization and concerns the acquisition of LPS. In this section, several paragraphs of detailed information regarding the merger as well as the reorganization are provided. The purchase price allocation is represented in a table of 16 lines of detail:

Cash and cash equivalents	$ 61.4
Trade receivables	99.2
Income tax receivable	26.9
Prepaid expenses and other assets, including non-amortizing intangible assets	187.7
Property and equipment	140.4
Computer software	490.2
Other intangible assets	504.9
Deferred income taxes	0.3
Goodwill	2,152.3
Total assets	3,663.3
Long-term debt	623.3
Deferred revenues	35.8
Legal and regulatory accrual	14.0
Other liabilities	197.3
Total liabilities	870.4
Net assets	$2,792.9

Further detail is provided regarding the fair value, the useful life, and the residual value of intangible assets acquired:

	Fair Value at Acquisition	Weighted Average Useful Life in Years as of Consolidation	Residual Value as of December 31, 2014
Amortizing intangible assets:			
Computer Software	$ 490.2		$ 430.1
Developed technology	469.8	9	416.6
Purchased technology	20.4	4	13.5
Trade names	5.3	8	4.5
Customer relationships	496.1	10	406.8
Non-compete agreements	3.5	3	2.3
Non-amortizing intangible assets:			
Developed technology	53.0		53.0
Total intangible assets and capitalized software	$ 1,048.1		$ 896.7

Conclusion

This essay focuses on the disclosure provided by IPO firms in their Form S-1, specifically the disclosure related to M&A and reorganization transactions undertaken shortly before the IPO. Although the SEC has established certain principles regarding this type of disclosure, firms retain nonetheless a certain level of discretion, which can significantly impact the extent of the disclosure provided in each individual prospectus. The analysis of the disclosure provided is interesting because several studies have shown that the quality or extent of disclosure, in general as well as specifically related to M&As, can provide investors with new and valuable information, and therefore impact the price at which the company's shares are issued on the IPO day. Furthermore, M&A deals are shown to have adverse effects on companies' long run performance; thus, it is interesting to observe how firms that are going public behave in terms of their disclosure choices pertaining to recently undertaken M&A transactions. The case studies that I have presented show that although the SEC provides certain compulsory guidelines, which govern the type and extent of information that is to be provided in the prospectus, firms can nevertheless exercise a certain degree of discretion. Ultimately, each individual prospectus reflects the firm's individual choices in terms of their disclosure, whereby each firm's decision can lead to differing outcomes for the performance of the IPO.

Appendix 1: Fundamental principles of M&A disclosure according to US GAAP. Rule ASC 805

Two standards issued by the FASB regulate the accounting and disclosure requirements for business combinations completed by firms subject to GAAP: Statement 141(R) (codified in ASC 805) and Statement 160 (codified in ASC 810-10) (Deloitte, 2020). The following aspects of the business combination are regulated by standards ASC 805 and ASC 810-10 (Deloitte, 2020):

1) Identifying a business combination;
2) Determining whether the acquirer meets the definition of a business;
3) The acquisition method of accounting;
4) Identifying the acquirer;
5) Determining the acquisition date;
6) Recognizing and measuring the consideration transferred and goodwill or bargain purchase gains;
7) Measurement period;

8) Determining what is part of the business combination;
9) Disclosure;
10) Private-company and not-for-profit entity accounting alternatives.

Thus, disclosure requirements for business combinations are provided by ASC 805-10-50, ASC 805-20-50, and ASC 805-30-50. According to ASC 805-10-50-1, the objective of business combination disclosure is for the acquirer to provide information that "enables users of its financial statements to evaluate the nature and financial effect of a business combination […]". This type of information is required for business combinations occurring during the current reporting period or after the reporting date but before financial statements are issued, as well as for business combinations that occurred in the previous reporting periods. According to ASC 805, only material business combinations are subject to the disclosure rules contained therein. For material business combinations, ASC 805 provides guidance on the following aspects of disclosure: general information to be disclosed, assets acquired and liabilities assumed, goodwill or gain from bargain purchase, consideration transferred, partial acquisitions and non-controlling interests, and acquisition-related costs.

Materiality. The disclosure rules contained in ASC 805 apply only to material business combinations. According to ASC 805, entities must provide separate disclosure for each material business combination that was completed during the reporting period. Furthermore, certain disclosures may also be required for multiple immaterial business combinations that occurred in the reporting period and that are material collectively. ASC 805 does not provide specific guidance on the precise definition of "material". Therefore, when assessing the materiality of a business combinations, entities may apply judgment.

General information to be disclosed. According to ASC 805-10-50-2, for single business combinations that are considered material, the acquirer must disclose the following general information:

a) The name and a description of the acquiree;
b) The acquisition date;
c) The percentage of voting equity interests acquired;
d) The primary reasons for the business combination and a description of how the acquirer obtained control of the acquiree […];

Letters e) through h) of the same paragraph contain additional requirements for immaterial business combinations that are material collectively.

Assets acquired and liabilities assumed. The acquirer must provide information on the assets acquired and the liabilities assumed by means of the business combination. Paragraph 805-20-50-1

mandates that the acquirer must disclose, for each business combination that occurs during the reporting period, "[…] the amounts recognized as of the acquisition date for each major class of assets acquired and liabilities assumed […]". For certain assets and liabilities, such as indemnification assets, receivables, assets and liabilities arising from contingencies, intangible assets, in-process research and development, and goodwill, ASC 805-20-50-1 includes more specific disclosure requirements.

Goodwill or gain from bargain purchase, including consideration transferred. Paragraph 805-30-50 contains disclosure requirements regarding the goodwill or gain from bargain purchase, including consideration transferred, which usually takes the form of cash, equity instruments, or a combination of both (Deloitte, 2020). According to this paragraph, the acquirer must disclose:

a) A qualitative description of the factors that make up the goodwill recognized, such as expected synergies from combining operations of the acquiree and the acquirer, intangible assets that do not qualify for separate recognition, or other factors.
b) The acquisition-date fair value of the total consideration transferred and the acquisition-date fair value of each major class of consideration […].

Furthermore, specific disclosure requirements are included for contingent consideration arrangements:

1) The amount recognized as of the acquisition date;
2) A description of the arrangement and the basis for determining the amount of the payment;
3) An estimate of the range of outcomes (undiscounted) or, if a range cannot be estimated, the fact and the reasons why a range cannot be estimated. If the maximum amount of the payment is unlimited, the acquirer shall disclose that fact.

ASC 805-30-50-4 includes additional disclosures to be provided during the window that is included between the acquisition date and the date in which the entity "collects, sells, or otherwise loses the right to a contingent consideration asset, or until the entity settles a contingent consideration liability or the liability is cancelled or expires".

Where a bargain purchase has occurred, according to letter f) of ASC 805-30-50-1, the acquirer must disclose:

1) The amount of any gain recognized […] and the line item in the income statement in which the gain is recognized
2) A description of the reasons why the transaction resulted in a gain.

Partial acquisitions and non-controlling interests. Specific information must be disclosed for partial acquisitions and non-controlling interests. According to paragraph 805-30-50-1(e), the acquiring firm shall disclose the following information:

1) The fair value of the non-controlling interest in the acquiree at the acquisition date;
2) The valuation technique(s) and significant inputs used to measure the fair value of the non-controlling interest.

Acquisition-related costs. Acquirers typically incur in acquisition-related costs, such as finder's fees, as well as advisory, legal, accounting, valuation, and other professional fees (Deloitte, 2020). Information regarding these transactions must be included in business combination disclosures according to ASC 805-10-50-2(f), which specifies that for each business combination that occurred during the reporting period, the acquirer must disclose "the amount of acquisition-related costs, the amount recognized as an expense, and the line item or items in the income statement in which those expenses are recognized. The amount of any issuance costs not recognized as an expense and how they were recognized also shall be disclosed".

Further disclosure requirements. ASC 805 regulates other information to be disclosed: information regarding business acquisitions achieved in stages, fair value measurements, measurement-period adjustments, business combinations completed after the balance sheet date, business combinations that occurred in previous reporting periods, and specific rules for public entities.

Appendix 2: Disclosure requirements for pre-IPO acquirers. Rule 3-05 of Regulation S-X

When a company decides to go public, one of the things it must do is to file an initial registration statement with the SEC. In addition to providing the acquisition disclosures required under ASC 805, "Business Combinations", companies subject to GAAP that are intending to go public need to evaluate the significance of any acquisitions completed up to three fiscal years prior to the filing of the Form S-1. Registrants may be required to provide audited historical financial information in accordance with Rule 3-05 of Regulation S-X (PWC, 2017). The requirement to provide separate financial information on the acquiree, as well as the number of past financial statements to be provided, depends on the following three factors (1) whether the acquired assets and liabilities meet the definition of a business for SEC reporting purposes, (2) the significance of the acquisition, and (3) whether consummation of the business acquisition is probable or has recently occurred (Deloitte, 2020). The level of significance determines the financial statement

periods that must be presented and it is assessed by performing the asset, investment, and income tests contained in Regulation S-X, Rule 1-02(w).

"Probable" Business Acquisition. Disclosure of past financial information pertaining to the acquiree is only required for SEC reporting purposes when the acquisition has recently been consummated or when it is probable that it will be consummated. Regulation S-X does not provide a specific definition of a "probable" business acquisition. However, the SEC provides guidance in the Codified Financial Reporting Release Section 506.02(c)(ii) (Deloitte, 2020, p. 7): "Guidance as to when consummation of a transaction is probable cannot be given because such a determination is dependent upon the facts and circumstances. In essence, however, consummation of a transaction is considered to be probable whenever the registrants' financial statements alone would not provide investors with adequate financial information with which to make an investment decision." Therefore, disclosure on probable business acquisitions requires a discretionary judgment which must take into account the overarching purpose of SEC disclosure regulation, that is, the goal to provide investors with adequate financial information with which they can make informed investment decisions. Deloitte (2020) provides a series of possible factors to consider when assessing the probability of a business acquisition, such as the existence of a signed definitive agreement or letter of intent, the incurrence of financial penalties if the acquisition is not consummated, or the approval from the board of directors or from the companies' shareholders, among others.

Definition of a business. Regulation S-X disclosure requirements are applicable to acquisitions of assets which, in aggregation, constitute a business according to the SEC's definition. A business is defined in Rule 11-01(d) (Deloitte, 2020, p. 220): "[…] the term business should be evaluated in light of the facts and circumstances involved and whether there is sufficient continuity of the acquired entity's operations prior to and after the transactions so that disclosure of prior financial information is material to an understanding of future operations. A presumption exists that a separate entity, a subsidiary, or a division is a business. However, a lesser component of an entity may also constitute a business. Among the facts and circumstances which should be considered in evaluating whether an acquisition of a lesser component of an entity constitutes a business are the following:

(1) Whether the nature of the revenue-producing activity of the component will remain generally the same as before the transaction; or

(2) Whether any of the following attributes remain with the component after the transaction:

(i) Physical facilities,

(ii) Employee base,

(iii) Market distribution system,

(iv) Sales force,

(v) Customer base,

(vi) Operating rights,

(vii) Production techniques, or

(viii) Trade names."

Significance. SEC Regulation S-X defines various significance thresholds of the acquiree in relation to the acquiring business which determine the financial statement requirements for the (probable) business acquisition. If an acquisition or probable acquisition exceeds one of the defined significance levels specified in Rule 3-05(b), Regulation S-X requires the acquirer to provide audited historical financial statements of the acquiree after consummation of the transaction (Chen, 2019). Rule 1-02(w) describes three different tests that are used to determine whether a subsidiary can constitutes a "significant subsidiary": the investment test, the asset test, and the income test. The test that results in the highest significance level must be compared with the significance levels specified in Rule 3-05(b) and will be used to determine the characteristics and the scope of the financial information which is to be presented (Deloitte, 2020). In other words, Rule 1-02(w), which defines the concept of "significant subsidiary", must be coordinated with the thresholds specified in Rule 3-05(b), which are higher, and which are used to determine the SEC disclosure requirements for business combinations. A "significant subsidiary" is defined in Rule 1-02(w) as follows (Rule 1-02(w) Regulation S-X):

1) (Investment test) The registrant's and its other subsidiaries' investments in and advances to the subsidiary exceed 10 percent of the total assets of the registrant and its subsidiaries consolidated as of the end of the most recently completed fiscal year.
2) (Asset test) The registrant's and its other subsidiaries' proportionate share of the total assets (after intercompany eliminations) of the subsidiary exceeds 10 percent of the total assets of the registrant and its subsidiaries consolidated as of the end of the most recently completed fiscal year.
3) (Income test) The registrant's and its other subsidiaries' equity in the income from continuing operations before income taxes of the subsidiary exclusive of amounts attributable to any noncontrolling interests exceeds 10 percent of such income of the registrant and its subsidiaries consolidated for the most recently completed fiscal year.

Rule 1-02(w) defines a “significant subsidiary”. Rule 3-05(b) thresholds for business combination disclosures differ from those specified in Rule 1-02(w). For business acquisitions that have occurred, the following thresholds apply: if none of the ratios contained in Rule 1-02(w) exceed 20%, the disclosure of the acquiree’s financial statements is not required; if any one of the is included between 20% and 40%, the acquiree’s financial statements pertaining to the most recent fiscal year must be disclosed; if any one of the of the ratios is included between 40% and 50%, the acquiree’s financial statements pertaining to the most recent two fiscal years must be disclosed; finally, if any one of the of the ratios exceeds 50%, the acquiree’s financial statements pertaining to the most recent three fiscal years must be disclosed (Chen 2019). The acquiree’s historical financial statements must be audited and include the balance sheet, the statement of operations, comprehensive income, cash flows, and changes in stockholders’ equity (Deloitte, 2020). Unaudited financial statements must also be provided for the interim period preceding the acquisition and the corresponding interim period in the prior year (Deloitte, 2020). For probable business acquisitions, audited historical financial statements for the two most recent fiscal years are only required where one of the ratios exceeds 50% (Deloitte, 2020).

IPO considerations. When a company wishes to go public, one of the things it must do is to file a registration statement with the SEC. This registration statement takes the form of an IPO prospectus and it contains essential financial and non-financial information regarding the company, which is meant to provide investors with adequate information to make an informed decision as to whether or not to provide their financial resources to the company in order to obtain a future return on their investment. A company that has recently acquired a business and that intends to go public must disclose information regarding the acquisition in its initial registration statement. In particular, the registrant must provide the acquiree’s financial information for the number of fiscal years required in accordance with the acquiree’s significance level as outlined in the previous sections. When preparing its initial registration statement, the firm must assess significance for all acquirees during “(1) periods for which its historical financial statements are presented and (2) subsequent interim period through the date the initial registration statement is filed and declared effective by the SEC.” Therefore, the company must evaluate the significance of all acquirees during the last three fiscal years, as well as any subsequent interim period until the date the initial registration statement is filed and declared effective by the SEC (Deloitte, 2020). Specifically, the acquiree’s most recent preacquisition financial statements are compared with the registrant’s most recent preacquisition audited consolidated financial statements, even when the acquisition has occurred a number of years before the initial registration statement is filed with the SEC (Deloitte, 2020).

When filing an initial registration statement, a registrant that has recently acquired a significant business or that will probably acquire a significant business in the near future may also need to consider the requirement to present pro forma financial information. The purpose of pro forma financial information is to allow investors to understand and assess the impact of a specific transaction by illustrating how that transaction may have affected the registrant's historical financial position as well as its operations had the transaction theoretically occurred at an earlier date (Deloitte (2020)). According to Article 11 of Regulation S-X Rule 3-05, among the circumstances in which a registrant may be called to provide pro forma financial information is the occurrence or the probable occurrence of a significant business combination (Deloitte (2020)). Pro forma financial information generally includes pro forma balance sheets and income statements, as well as explanatory notes (Deloitte (2020)), and it is required when all three of the following conditions are met:

a) The acquisition or probable acquisition is significant according to Rule 1-02(w) of Regulation S-X;
b) The historical financial statements of the acquiree are required to be presented in the filing as dictated by the significance thresholds contained in Rule 3-05(b) of Regulation S-X;
c) The transaction is not already reflected in historical financial statements of the acquirer.

Pro forma financial information concerning the acquisition must be presented in a registration statement when the acquisition occurred 75 or more days prior to the filing and its significance level is below 50 percent. Furthermore, pro forma financial information must be included a in registration statement for a probable acquisition or a recently consummated acquisition that exceeds the 50 percent significance level, regardless of the 75-day period rule (Deloitte, 2020).

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