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**"Analyst coverage in IPO market and
use of non-GAAP earnings in the prospectus"**

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ABSTRACT

The disclosure of non-GAAP earnings measures is a common form of voluntary corporate disclosure among firms involved in an initial public offering (IPO) process. Using a sample of 21,004 analyst EPS forecasts calculated for 691 US IPOs completed between 2003 and 2012, it is examined how financial analysts perceive non-GAAP earnings information provided by managers in the prospectus filed with the SEC when calculating EPS forecasts. In particular, it is investigated whether IPO firms that disclose also non-GAAP earnings in the prospectus receive analyst coverage earlier compared to IPO firms that disclose only GAAP earnings.

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1. INTRODUCTION

A key problem that companies face in the capital markets is how to attract funds in order to finance their operations. In particular, their operations are financed by investors that allocate their savings into equity investments with the expectation to generate positive returns. In turn, investors, before investing in companies' stocks demand for relevant information from the companies. The information that companies provide to the public generally refers to corporate disclosure and it helps investors to decide and assess whether to invest their savings in a company rather than another company.

The presence of corporate disclosure in the capital markets is important as it allows investors to be informed about the companies' economic and financial situation. However, when considering capital markets, managers and investors value investments conditional on their own available information. Generally, it results that investors are the least informed party in a transaction as managers have more information about the business they run and thus, have incentives to boost the value of their company. These situations refer to information asymmetries or information gaps in the capital markets.

Because of the existence of information gaps, information intermediaries, such as financial analysts help to solve information asymmetries problems. Consider investors that do not have a deep knowledge of the company or a financial sophistication in evaluating a company's stock. In this framework, financial analysts have the expertise to interpret corporate financial information. In particular, financial analysts use financial reporting published by companies and engage in private information production that aims at uncovering firms' superior and raw information (Healy & Palepu , 2001). In particular, corporate information flows among several participants in the capital markets and financial analysts are positioned in between companies and investors. Therefore, financial analysts act as filters, supplementing the amount of information disclosed by companies with other sources of information (i.e. analyst reports). Based on the information published by companies, analysts elaborate that information by forming earnings estimates, as well as target prices estimates and buy-sell recommendations for securities.

Investors' awareness and transparency are prerequisites for the functioning of capital markets. In particular, regulators and accounting standards ensure the existence of certain rules and the existence of Generally Accepted Accounting Principles (GAAP) for corporate disclosure that aim at reducing information asymmetries (information gaps) between companies and investors. In particular, companies can communicate their economic and financial situation through mandatory

and voluntary disclosure. The former is part of the compulsory filings, such as periodic reports (i.e. 10-Ks). The Security Exchange Commission (SEC) and the Financial Accounting Standards Board (FASB) implement regulations for mandatory reporting in US. The latter, instead, refers to voluntary forms of corporate disclosure that supplement mandatory disclosure. Consider when mandatory published information disclosed by companies is not enough to provide a clear picture of the company performance. For instance, the uniformity of accounting standards according to GAAP, which provide a common “language” for accounting, reduce flexibility for managers to reflect business differences in their companies’ financial reporting; therefore, voluntary disclosure can be a useful tool for managers in order to improve the quality of financial reporting to communicate to investors. However, managers can choose the accounting and disclosure policy to adopt. The current study examines, non-GAAP earnings reporting as one form of voluntary disclosure from companies. In particular, non-GAAP earnings are GAAP earnings adjusted for items viewed as “unusual” or “non-recurring” or non-representative of ongoing operations. With regard to these alternative earnings, there exist two opposite views. In fact, on one hand managers claim that non-GAAP earnings exclude transitory and non-cash items, non-GAAP earnings improve the assessment for future cash flows and firm value (informativeness). On the other hand, critics argue that this alternative accounting practice is a symptom of managers’ opportunistic and incentive behavior push them to exclude certain items from GAAP earnings in arriving at the actual non- GAAP measure, depicting the company in the best way possible (opportunism).

Furthermore, when considering particular business situations, such as initial public offering (IPO), regulations for information disclosure become stricter. For example, in the US setting, US GAAP and SEC dictate many accounting and disclosure requirements. This is due especially to the particular nature of IPO market, being very volatile and risky. In order to register an offering, a company files a registration statement with the SEC, typically using Form S-1. In particular, as soon as the company agrees with its investment bankers (underwriters), the prospectus is included in the Form S-1 and is used by the company to solicit potential investors. This is a legal document of the actual stock offering, which contains all the history of the company, the products, management and other relevant information available to investors. This document shows the risks to all the potential buyers who are buying the stock.

One interesting aspect regarding the US IPO market and the information included in the prospectus is the use of non-GAAP metrics that describe the corporate financial performance. In particular, these measures are not expressly required, but it has become usual to include additional

operational and other metrics, such as non-GAAP earnings in the prospectus. This could be useful to help investors to understand better the issuer's business.

In the light of the above, the current study explores this type of disclosure in the IPO setting, and further investigates whether the presence of non-GAAP earnings in the prospectus affects the timing of forecasts of financial analysts. The data analyzed is a sample of 691 IPOs completed between 2003 and 2012, of which 239 IPO firms (34.60%) disclose non-GAAP earnings in their final prospectus. In particular, non-GAAP reporting for IPOs increases dramatically from about 20.0% in 2003 to nearly 61% in 2012. Subsequently, for each IPO, analyst forecasts are retrieved. Therefore, the final sample includes 21,004 analyst forecasts calculated to estimate future EPS within two years after the offering for 691 IPOs from 2003 to 2012.

For the purposes of this study, the number of days to coverage is calculated as the difference in trading days between the date of forecast and the date of the offering. This corresponds to the variable that describes the timing of forecasts for analysts. However, not all days to coverage are considered, only the lowest days to coverage of each analyst for each IPO. Therefore, the lowest days to coverage corresponds to the first day or activation date in which the analyst made the first forecast. This procedure gives 6,486 first activation dates of analysts. Furthermore, the timing in which several analysts calculate forecasts for the first time for the same IPO were investigated. In particular, analysts are ranked from the earliest to the latest depending on the date in which they are active for the first time.

From the statistical analysis of univariate tests of differences, it emerged that IPO firms who disclose non-GAAP earnings in their prospectus receive quicker analyst coverage from the 4th until the 9th analyst in the ranking. In particular, the difference is significantly greater than zero from the 4th to the 9th ranking, suggesting that non-GAAP stocks receive coverage from the 4th until the 9th analyst earlier than only GAAP stocks within two years from the offering. Moreover, given that the disclosure of non-GAAP earnings in the prospectus is likely to be influenced by the size of firm, IPOs firms are divided according quartiles of the size. Firstly, it emerged that difference in mean between the size of non-GAAP IPOs and GAAP IPOs were significantly greater than zero, suggesting a relation between the disclosure of non-GAAP earnings and the size of the firm. However, interestingly it emerged that analysts in the first ranking (earliest analysts) are active earlier when they cover non-GAAP IPOs belonging to the fourth quartile for the size (larger firms).

Finally, by developing a multivariate regression analysis it results that the coefficient for the dummy variable, indicating the presence of non-GAAP earnings in the prospectus, is negative

and significant. This suggest that the presence of non-GAAP earnings in the prospectus decreases the days before analysts start to cover the IPO firm.

2. BACKGROUND INFORMATION

2.1 INFORMATION PROBLEM IN THE CAPITAL MARKETS

Capital markets are a large system of different types of participants, including companies, investors, regulators, financial institutions and informational intermediaries. On one side, companies demand for capitals to finance their projects and operations and, on the other side, investors¹ look for investment opportunities. In this setting, the difficult question for all companies is that they need funds to finance their operations and, in turn, investors rationally want to finance those operations in which they see profitable investments in order to gain positive returns. At the same time, it is not easy for investors to find the right investment opportunities (suitable for them) and assess their actual future profitability. Perhaps investors may not have the means or the expertise in order to find the right opportunities or necessary information for assessing the investment; therefore, the allocation of saving towards good investments opportunity is a challenging task.

With this in mind, buyers must know what sellers are offering and therefore markets require information for their functioning. If no information is provided transactions are more likely to not occur. Conversely, if transactions occur, the prices at which they occur will be distorted because buyers are not well informed. Therefore, if proper and useful information were not provided, investors would prefer not to finance companies because they are not willing to bear risks, such as losing their money in a bad investment.

In their contributions, Akerlof (1970), Jensen and Meckling (1976), in describing the working mechanism of capital markets and their efficiency, they also explain how insufficient information affects participants in the market and discuss the presence of information asymmetries in the capital markets, in which the information is not equally shared between individuals. On one hand, some individuals have more information and, on the other hand, other individuals undergo this imperfection because of inadequate information. Capital markets experiences two types of information asymmetries: **adverse selection** and **moral hazard**. In particular, **adverse selection** indicates the situation in which one party in a negotiation has relevant information the other party

¹ Although there are several types of investors, the focus in this study is on equity investors.

does not; and **moral hazard** means that one party in a transaction has the opportunity to assume additional risks that negatively affect the other party.

Firstly, Akerlof (1970) analyses the more general situation of **adverse selection** when an offer conveys negative information about what it is being offered. The most famous example is the market for used cars. Suppose that used cars have different qualities, from the worst or “lemons” (the cars that always are breaking down) to the very best “plums” (the most reliable cars). The sellers know the quality of their cars, but suppose the buyer cannot tell which cars are lemons and which are plums; this is a model of asymmetric information as sellers have more information than buyers do². The same example of Akerlof (1970) can be introduced in the context of companies and investors. Both managers and investors value investments conditional on their own available information. Facing information or “lemons” problem, investors are the least informed part because managers typically have better information than investors do about the actual value of the investment of the business they run. Secondly, in the case of **moral hazard**, managers have incentives to make decision that are inappropriate from the viewpoint of investors, such as investment or operating decisions that are harmful to interest of outside investors (Jensen & Meckling, 1976).

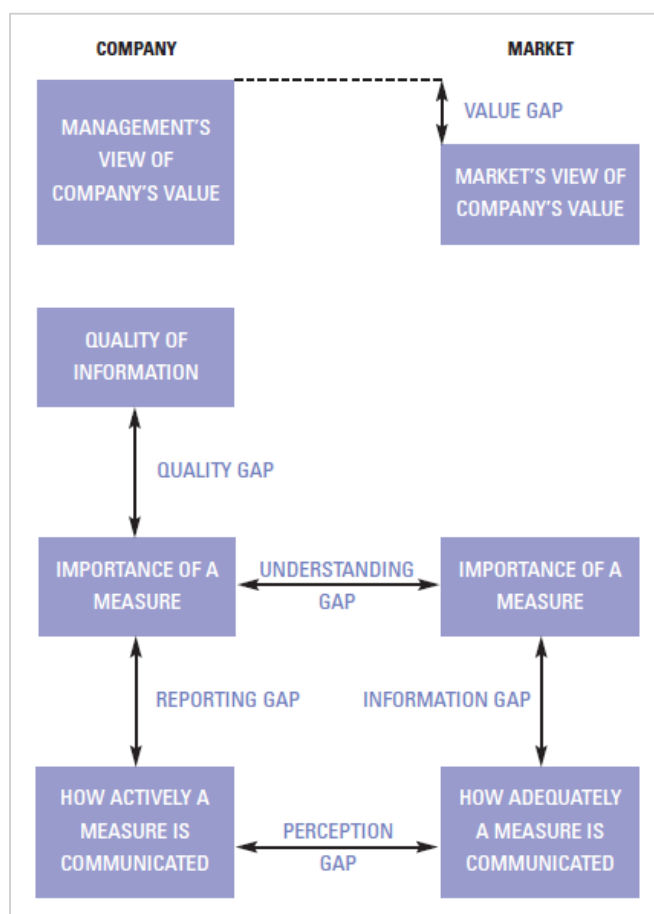
Summing up, the difficulty in matching savings and investments comes from three reasons. First, managers have better information than investors on the value of business investments opportunities. Second, managers have an incentive to boost the value of their ideas. Third, investors sometimes do not have the financial sophistication to assess various investment opportunities.

The presence of information asymmetries and deficiencies in the capital markets can be extended towards different directions. Consider the different information gaps occurring between the company and the market as a whole, including then all company’s stakeholders. There can be identified six information gaps within the corporate environment, including *perception gap*, *understanding gap*, *information gap*, *reporting gap*, *quality gap* and *value gap*. Figure 1 provides an overview of information gaps, highlighting how these gaps affect the management of the company, investors and the market as a whole. In particular, a *perception gap* occurs if the utility

² Given that buyers cannot tell the difference between a lemon and a plum, they will not be willing to pay more than what an average quality car is worthy. However, since buyers are willing to pay only for average quality cars, sellers with the highest quality car will exit the market. When the highest quality car exit the market the average quality of car falls, which reduces the price the buyers are willing to pay even more. That causes sellers of the next high quality car to drop out the market as well. At the end of what sometimes called the “death spiral”, the market collapses and buyers conclude that they would not buy any car that is offered for sale (Akerlof, 1970).

of information provided by the company is perceived differently by the market. An *understanding gap* exists if different stakeholders and management assess information data in different ways. An *information gap* tells that information (i.e. through performance data) is not communicated to the market adequately. A *quality gap* means that the information about performance is not reliable. A *reporting gap* occurs when relevant information is not disclosed, such as business goals, which enables investors to draw their conclusions on whether the investment is worth. Finally, the *value gap* reflects the cumulative impact of all the other gaps and represents the different between the company's current market value and management's perception of what the value should be (Schuster & O'Connell, 2006).

Figure 1-Analysis of various information gaps



Source: (Schuster & O'Connell, 2006)

These gaps are common. Consider an investor who has to choose whether to invest between two securities of two different companies. Each company then reports one financial measure useful for the investor to decide in which securities to invest. For instance, it may happen

that the first company calculates the same financial measure, but does not include written relevant information that explains the method used in the calculation (*reporting gap*). It may happen that the second company provides a financial measure never reported before by the same company (*perception gap*) with subsequent doubts for the investor.

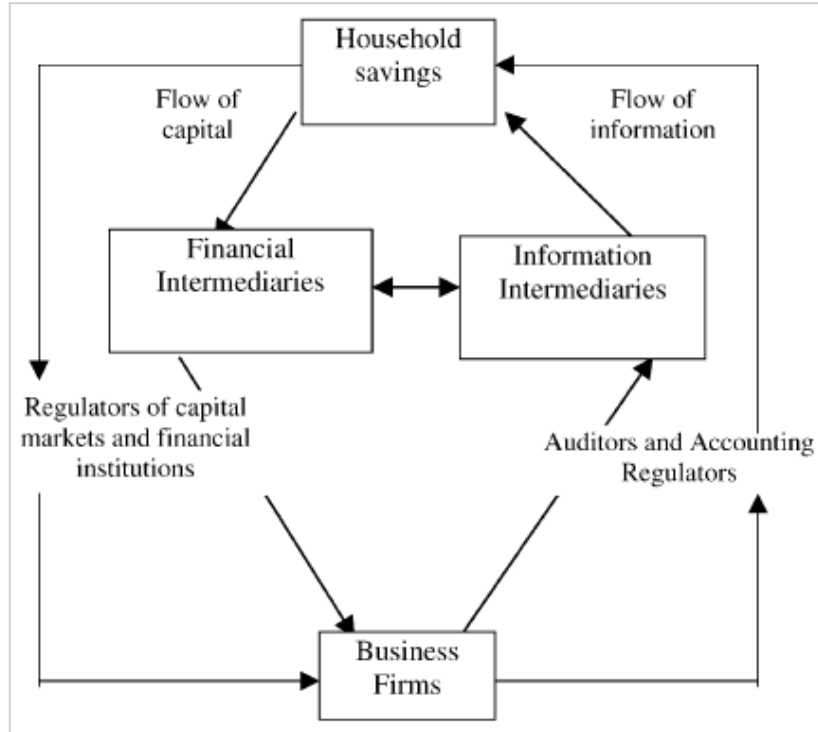
To remedy to some of these gaps in between investors and companies there are **information intermediaries** (Healy & Palepu , 2001). In particular, **information intermediaries**, such as financial analysts, rating agencies, industry experts and financial press, collect, organize, and distribute information disclosed by companies to their clients (Womack, 2002) and are relevant figures for solving problems of information asymmetries. Nevertheless, there also exist **financial intermediaries**³, such as small and mid-large financial institutions, which are important in the functioning of the capital markets because they act as middlemen between savers (households) and borrowers (companies) as well as offer a range of several financial services.

The presence of intermediaries adds value by helping investors distinguish good investments from bad ones. Healy and Palepu (2001) provide an insight about how capital and information flow within the capital markets and illustrates how this mechanism works. Figure 2 illustrates a schematic representation. On one side, the **flow of capital** from savers to business ideas (left side), which can flow directly from savers to businesses or through financial intermediaries, such as banks, venture capital funds, and insurance companies. On the other side, information intermediaries implement the **flow of information** from businesses to savers (right side). However, firms communicate with investors both directly through media, such as reports and press release, or through intermediaries, such as financial analysts.

Figure 2 displays also the presence of regulators within the circuit of capital and information flows. In particular, on one side, **capital markets regulators** substantially set the rules for the functioning of the capital markets, the standards for corporate public financial reporting, the rules for investment, and the regulations for securities exchanges. On the other side, **accounting and auditing regulators** formulate Generally Accepted Accounting Principles (GAAP). Regulators and standards, respectively, assure the presence of certain rules, minimum disclosure requirements and appropriate accounting practices in order to reduce the information gaps between companies and investors.

³ Financial intermediaries, as small, mid-large financial institutions. They can be divided into banking financial intermediaries (commercial banks) and non-banking financial intermediaries (investment banks, insurance companies, leasing companies). In particular, the former act as middlemen between savers and borrowers. Their main task is to accept deposits and then use those funds to offer loans to their customers. The latter, instead, offer a range of other financial services such as underwriting activities, M&A advice, insurance coverage, market making, etc.

Figure 2-Financial and information flows in a capital market economy



Source: Healy & Palepu (2001)

In this setting, the functioning of both the information intermediaries and financial intermediaries depends on financial reporting. In particular, information intermediaries add value by either improving the credibility of financial reports (as auditors do), or by analyzing the information in the financial statements (as analysts and the rating agencies do). Financial intermediaries rely on the information in the financial statements, and supplement this information with other sources of information, to analyze investment opportunities (Palepu et al., 2003). In conclusion, the information problem in the capital markets, addressed in this paragraph, introduces the important figure of financial analysts and their role in the functioning of capital markets.

2.2 ONE SOLUTION FOR INFORMATION PROBLEM: FINANCIAL ANALYSTS

Because of the “lemons” problems, there is demand to engage private information production. Consider investors (in particular small investors) that have not the necessary competence and expertise to interpret the raw information provided by the companies. The

presence of information intermediaries, such as financial analysts aims at uncovering firms' superior and raw information (information gap). Whether on one hand, the same firms disclose public available information on the other hand financial analysts provide financial information as well. In particular, financial analysts are themselves users of financial reporting issued by the companies and then they engage in private information production (Healy & Palepu , 2001).

Financial analysts play principally two roles in the capital markets. Firstly, they reduce information asymmetries and contribute to informational efficiency between managers and outside investors by generating relevant information. Secondly, they externally monitor of managerial activities and decision-making process as they have access to deeper knowledge for analyzing corporate data (Jensen & Meckling, 1976).

The process through which analysts present their reports about stocks commonly refers to “analyst coverage” or “analyst following”. Analyst coverage has become an important an important component of stocks' valuation and investment process as whole. Investors ask for information that is more accurate about companies and financial analysts provide this service. In particular, when performing their dissemination of information (analyst coverage), financial analysts:

- gather new information on the industry or individual stock from customers, suppliers and firm managers;
- analyze these data and form earnings and target prices estimates, plus they give recommendations; and
- present recommendations and financial models to buy-side client through written reports (Michaely & Womack, 1999).

Financial analysts tend to be specialized on the type of institution they work for providing a variety of services in brokerage houses, mutual funds, investment banks, pension funds or even independent companies. Depending on the type of clients they work for, typically analysts are grouped in sell side analysts and buy side analysts⁴.

- **Sell-side analysts**, who are usually employed by brokerage houses and clients. Their major task is to analyze listed companies and provide equity research. They write in-depth research reports and their earnings forecasts, recommendations and target prices are available to the public as well. In particular, sell-analysts provide their estimates of financial

⁴ For the purposes of this research, the primary focus is on sell-side analysts.

information to the Institutional Broker Estimate System⁵ (IBES). IBES standardized forecasted financial information and standardized summary data are then available in the database, against fees payments, to subscribers such as brokerage houses, buy-side analysts, other large investors, researchers and media.

- **Buy-side analysts**, who are usually employed by asset management companies and make internal recommendations and forecasts exclusively to money managers.

The extant literature finds that equity research analysts produces information that matters to investors and individuates some positive effects that analyst coverage produces in the capital markets, including *mitigation of agency problems, positive market reaction, liquidity improvement, change in investor recognition, reduction of cost of capital, confidence*. Conversely, other evidence shows some negative effects deriving from analyst coverage, including *biasness related to underwriting relationships and overconfidence*.

Mitigation of agency problems. The separation of ownership and control in a company spotlight financial analysts' ability to mitigate agency problems. Jensen and Meckling (1976) argue that analyst activities restrict managers' self-interest and non-value maximizing activities; therefore, they lessen information asymmetries between managers and outsider investors with positive effects on the firm's ability to raise capital.

Positive market reaction. The market interprets positively analyst initiation⁶ of coverage. Initial recommendations made by new analysts for the first time have positive impact on stock prices. In particular, initiation abnormal returns are more positive than abnormal returns to recommendations by sell-side analysts who already cover the stock (Irvine, 2003).

Liquidity improvement. The greater analyst coverage the more informed traders in the market. An increase of analyst coverage shows liquidity improvements due to enhanced competition between informed parties. It results in a lower bid-ask spread and lower rates of return, because of relatively liquid stock due to higher trading (Brennan & Tamarowski, 2000). Additionally, Irvine (2003) finds that strong buy analysts' initial recommendations attract more liquidity, making the effect of

⁵ Institutional Broker Estimate System (IBES) is currently owned by Thomson Reuters.

liquidity improvements depending also on the level and type of analysts' recommendation rather than just the initiation itself.

Change in investor recognition. Investors react favorably to coverage initiation because in that way analysts promote stocks to more investors. By raising investor awareness, the increased analyst coverage has an incremental price effect, since investors pay more attention to stocks that analysts cover. Investors react favorably to initiations because they understand that analysts create value for firms by promoting the stocks to more investor, but at the same time analysts to initiate coverage on stocks that they anticipate to have higher investor recognition (Li & You, 2015).

Reduction of cost of capital. Analysts are themselves users of the financial information disclosed by companies. Companies may benefit from having many analysts because analysts increase the precision of information and this lowers the companies' cost of capital. For instance, Botosan (1997), analyzing the relation between disclosure level and cost of capital, provides evidence that firms with low analyst following, greater disclosure from companies reduce on average the cost of capital.

Confidence. The depth of analyst coverage has significant effects on investors' decisions-making, as analysts can attract investors' attention to particular securities they follow. On one hand, investors feel more confident and informed on whether to invest in highly covered stocks, as they are willing to buy securities they feel more familiar with. On the other hand, firms experience a reduction in their external financing. In fact, firms with higher analyst coverage are associated with higher external financing and lower cost of capital (Doukas, Kim, & Pantzalis, 2008).

Biasness in underwriting relationships. The purpose to win investment-banking businesses may compromise the analyst's objectivity because of conflict of interest. On one hand, brokerage operations such as equity research are motivated to maximize profit from commissions and spreads by providing clients information. On the other hand, investment-banking services aim at completing transactions, such as IPOs, SEOs and M&A for new and current clients. Therefore, brokerage house operations lead to conflicts when the same financial institution provides both analyst research and investment-banking services (i.e. underwriting). In particular, when referring to underwriting operations, analysts are grouped in affiliated and unaffiliated analysts. The former

are employed by the investment banks that provide underwriting services, whereas the former are external and do not have any kind of relationship with the underwriter bank. Sources of bias, towards a more optimistic view in forecasting earnings and making recommendations, argued by researchers are the fear of jeopardizing potential investment banking business, the fear of losing access to management information and seeking to generate trading commissions (McNichols & O'Brien, 1997). Consider the underwriting business of an investment bank. This business needs large investment in developing relationships with the issuers. Consequently, as a matter of fact the investment bank (underwriter) does not welcome negative reports from analysts who work within the underwriter's research team. Evidence shows that affiliated analysts who follow a company, and work for the investment bank that provides underwriting services for the same company, show more favorable recommendations or optimistic forecasts than those ones made by unaffiliated analysts (Dugar & Nathan, 1995; Lin & McNichols, 1998).

Overconfidence. In contrast with the evidence that greater coverage attract investors, with positive liquidity effects and enhanced competition between informed traders, excessive analyst coverage boosts investor optimism causing stock prices to trade above their fundamentals (Doukas et al., 2005). This overvaluation is associated with stronger analyst coverage driven by investment banking incentives and analyst interest in generating trading commissions. As consequence, this “hyping up” of stocks provides the opportunity to issue overpriced stocks, because managers can exploit favorable market conditions in issuing equities (Chang et al., 2006).

2.3 TIMING OF ANALYST EARNINGS FORECASTS

Investors use analyst earnings forecasts to predict a firm's future cash flows and they are more useful if they are accurate and timely. Logically, the more the amount of information available to analysts the more accurate forecasts are. On one hand, if analysts wait longer to issue forecasts they would have more information in predicting earnings. For instance, by gathering information from their peers' forecasts, analysts may improve their own forecast accuracy. On the other hand, investors value timely information for their trading. Therefore, delayed forecasts are more likely to deprive investors to gain from trading.

The literature offers two theories that link analysts' forecast accuracy with the timing of their forecasts: the herding theory and the trade-off theory. It is still unclear which theory describes the best individual analysts' behavior in forecasting earnings; however, the herding theory is the most established and makes good predictions. In particular:

- the **herding theory** argues that analysts who are more capable act earlier (basing their forecasts on their private information) and less capable analysts subsequently herd, perhaps in order to hide their non-capability (Scharfstein & Stein, 1990; Trueman, 1994). The idea underlying these models is that more recent analyst forecasts are more accurate than forecasts issued earlier because of the timing advantage of more recent forecasts. This is attributable to the fact that analyst can observe other analysts' forecasts issued before as well as public information disclosed by firms.
- the **trade-off theory** argues that analysts with more precise private information forecasts earlier and those with higher learning ability forecast later. Therefore, both earlier and later forecasts are informative but for different reasons. Guttman (2010) considers the active learning of analysts as a benefit of waiting. In his model, analysts face a trade-off between the timeliness and the accuracy in their forecasts linked to both analysts' private information and their learning ability. In equilibrium, analysts with higher precision of initial private information tend to forecast earlier and analyst with higher learning ability tend to forecast later (Guttman, 2010).

On a timeline basis, sell-side analysts perform two tasks when they predict earnings: **information discovery** and **information analysis**. The latter is the discovery of private (idiosyncratic) information and the former is the interpretation of public information. On one hand, it follows that if analysts primarily discover and publish material private information, then analyst reports will tend to pre-empt subsequent corporate disclosures. On the other hand, if analysts primarily interpret existing public information in their reports, then corporate disclosure that are information rich will tend to be followed by more informative analysts report because there is more information for analysts to analyze; therefore, the two reports tend to reinforce each other (Chen & Cheng , 2010). Nevertheless, the two time lengths in which analysts make discovery of private information and interpretation of public information are unknown. Based on this, Chen and Cheng (2010) study the association between a company's absolute stock return at the earnings announcement date and the absolute stock returns in the near week in which analysts release their

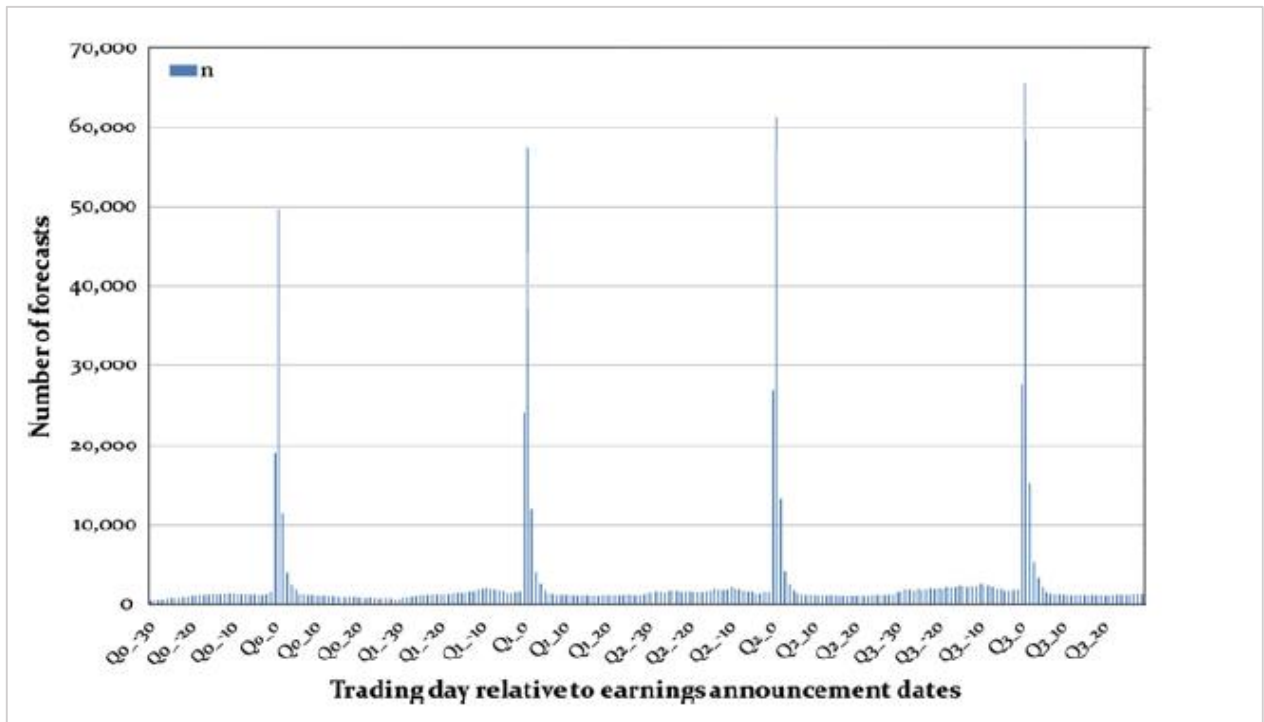
forecasts. It emerges that before the earnings announcement (up to 30 trading days) analysts engage in information discovery and after one week from the earnings announcement (up to 5 trading days) analysts focus on analyzing public disclosure. Finally, they find that information discovery (interpretation) dominates in the week before (after) firms announce their earnings.

Similarly, using a sample of firms whose fiscal years end between 1999 and 2008, Keskek et al. (2014) collect from IBES individual analyst forecasts of annual earnings issued during a fiscal year, identify the earnings announcement date that is closest to each forecast, and count the number of trading days between the forecast and the announcement⁷.

They label days -30 to -1 as the “information discovery” phase, days from 0 to +4 as the “information analysis” phase and days from +5 to +29 as the “post-analysis” phase. Similarly to Chen and Cheng. (2010), they observe variation in analyst forecasting activity during the year. Figure 3 displays the distribution of analyst forecasts of fiscal year t 's earnings in the 60-trading-day windows around earnings announcement for the year $t-1$ (4th quarter) and the first three quarters of year t . In particular, analysts activity increase slightly in the “information discovery” phase, declines gradually within 10 days before the announcement, suddenly has its peak at the earnings announcement day and finally drops significantly in the next days (the lowest point is after 30 days from the announcement). As it is possible to notice, this cycle is repeated four times and all the times the same trends occur.

⁷ The final sample consists of 712,946 individual analyst forecasts around 97,005 earnings announcement events (Keskek, Tse, & Tucker, 2014).

Figure 3 - The timing of annual earnings forecasts



Source: Re-elaboration (Keskek, Tse, & Tucker, 2014)

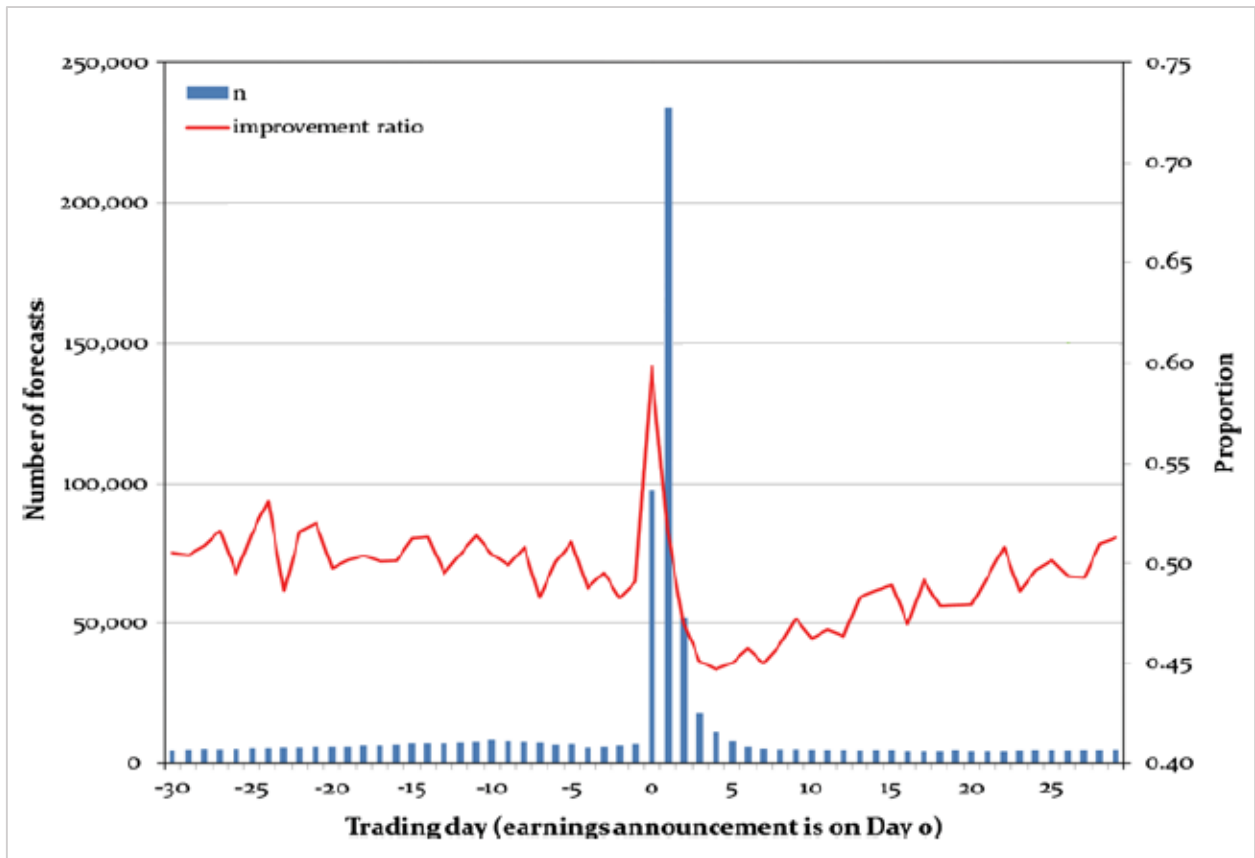
They also measure forecast accuracy improvements (improvement ratio). This measure tells how more accurate is individual analyst forecast than peer's outstanding forecasts, proxied by the most recent forecast by a peer analyst⁸. To verify how **relative**⁹ forecast accuracy improvements change over the two phases (information discovery and information analysis), they split the information discovery and information analysis phases into sub-phases around the earnings announcement date. Therefore:

- Information discovery: early period (days -30 to -16) and late period (days -15 to -1);
- Information analysis: early period (days 0 to 2) and late period (days 3 to 4)

⁸ The mean estimate is used if more than one analyst issues a forecast for the firm on that day (Keskek et al., 2014).

⁹ They use relative forecast accuracy measure that allows focusing on the forecast's contribution to overall forecast accuracy. They do not use absolute forecast accuracy (the difference between a forecast and the actual earnings) because it might reflect analysts' collective accuracy at the time of the forecast (Keskek et al., 2014).

Figure 4 - Proportion of forecasts that are more accurate than peers' outstanding forecasts



Source: Re-elaboration (Keskek, Tse, & Tucker, 2014)

Figure 4 groups all earnings announcements events and plots the daily mean of the percentage of forecasts from all analysts on a given trading day that are more accurate than peer's outstanding forecasts (improvement ratio). In particular, the percentage rises at 53% about 25 days before the upcoming announcement and has a downward trend until the announcement date. The maximum peak occurs at the announcement date (60%), drops quickly 1 day after at 45% and steadily declines until 5 days after the announcement. Finally, this pattern shows that analyst forecast quality decreases over both the information discovery and analysis phase, suggesting that analysts with superior information tend to forecast earnings earlier in both phases than their peers.

In conclusion, two aspects follow about forecast timing for analyst decisions. First, brokerage houses can take advantage from a timely forecast by triggering greater trading and commissions, which in turn will benefit the analyst. Second, forecast accuracy may be sacrificed by reducing opportunities for analyst to observe other analysts' forecasts and private information.

2.4 COMPANIES' CHARACTERISTICS RELATED TO ANALYST COVERAGE

Because of the important role analyst research plays in informing investors, academics have long been interested in the factors determining analyst coverage. A group of studies tries to explain the effects of certain variables on the number of analysts following a firm. There are some possible explanations for analyst following and the evidence suggests that a number of firm's characteristics influences the number of analysts following a firm. In this study, some of the determinants are discussed including trading volume, firm size, percentage of share retained, market-to-book ratio, accruals quality, intangibles, underpricing and corporate disclosure.

Trading volume. Brokers must carefully assess the benefits of covering a particular stock against another one when deciding how to allocate analyst services, such as equity research. Brokers generally earn from the expected commission revenues from trading and potential financial and consulting revenues from the covered company. The higher trading volume created by analysts the larger broker's commissions which analysts work for. Analyst following and trading volume should be positively related because brokerage commission are proportional to the trading volume generated by the sale of securities. In particular, brokerage houses compete each other to generate higher trading volume and offer equity research as service to their clients in generating trading business. Nevertheless, an indirect effect follows. Based on these arguments, analysts' incentive to generate trading commissions is the driver for the availability and accuracy of analysts' reports. Hayes (1998) identifies that forecasts for future expected high-performance stocks are likely to be more accurate than poorly stocks performance forecasts, due to more commitment in equity research.

Firm size. The firm size refers to the total market value of the firm's stock and is an important factor that affects analyst following of firms. First, by focusing on larger firms analysts can provide their employer more valuable future projects compared to smaller firms. Evidence shows a positive relation between the size of the firm and the number of analysts following the firm. Bushan (1989) argues that, on one hand, investors find private information more valuable about larger firms than the same information about smaller firms. On the other hand, analysts have incentives to focus on larger firms because these firms stimulate the interest of many investors and analysts can benefiting from potential trading.

Percentage of shares retained. The percentage held by insiders is supposed to be negatively related to the number of analysts following a firm. This assumption follows by the fact that the demand for coverage comes from outsider investors, thus when the percentage of insider ownership increases, analyst coverage lowers. Moreover, the cost of analyst coverage may be more costly if analysts have to make more effort in equity research because insiders may not reveal so much information; therefore analysts tend to provide less coverage (Bushman, 1989).

Price-to-Book ratio. A high price-to-book (market-to-book) ratio means that the current market value of the company is relatively higher compared to the book value of the firm. Investors look at the high market-to-book ratio companies because they have higher potential growth. According to McNichols and O'Brien (1997), analysts shy away from disclosing opinions for companies in which they do not see favorable perspectives, therefore analysts tend to cover firms by providing earnings forecasts and recommendations for securities about their beliefs are favorable¹⁰.

Accruals quality. Accruals adjust or shift the recognition of cash flows over time. In particular, accruals are based on estimates and assumptions, so that potential estimation errors result in lower accruals quality, noisier signal about the firm value and worsening of asymmetric information (Dechow & Dichev, 2002). It follows that the demand for private information for lower quality accruals firms attract more analysts seeking for mispriced securities to cover.

Intangibles assets. Companies with substantial intangible assets, sometimes not entirely recognized in the balance sheet, are assumed to have more information asymmetry and more uncertain market value. High intangibles firms share price does not reflect accurately its fundamental value and analyst activities can yield profitable trading business and higher commissions. Evidence shows that significantly more analysts cover companies with higher research and development expenses and higher advertising expenses. This is because intangible assets are generally unrecognized. Estimates of the value of these assets are absent, so that companies with more intangible assets have less informative prices and analysts can gain from this mispriced securities (Barth et al., 2001).

¹⁰ McNichols and O'Brien (1997) document the self-selection behavior, in which analysts assign to stocks they have just added to their lists of followed stocks are heavily weighted toward "Strong Buy" recommendations, compared with ratings of stocks with previous recommendations. This is consistent with analysts preferentially adding stocks whose future prospects they view most favorably.

Underpricing. One of the determinant of the analyst following relies in a particular situation the company face. In particular, underpricing (determinant) is associated with the market of IPOs. The underpricing indicates the pricing of an IPO below its market value. Evidence shows that on average, the first-day return of US IPOs form 1980 to 2015 is 18% (Ritter, 2016). The first-day return measures the degree of the underpricing, intended as the percentage change that the offer price of an IPO undergoes at the end of the first trading day on the market. With regard to the attention paid by analysts, more underpriced IPOs attract more analysts. Analysts, in turn, tend systematically to overestimate the future earnings for the fiscal year of these companies. In particular, as the length of the time between making the forecast and fiscal year for which the forecast is made increases, so does the forecast error (Rajan & Servaes , 1997).

Corporate disclosure. Ex-ante it is not obvious whether analysts would prefer following firms that disclose more information rather than less, raising the doubts on whether financial disclosure are substitutes or complements in mitigating information asymmetry. In particular, it depends whether analysts behave as information intermediaries or information providers (Bushman, 1989; Lang & Lundholm, 1996). In the first case, the flow of information goes from firms to analysts, who in turn elaborate the information and transmit it into the capital markets. In the second case, conversely, analysts compete directly with firm-provided disclosure. On one side, Lang & Lundholm (1996) find that analysts follow firms with more informative disclosure practices, indicating company-provided disclosure policies as an important determinant of analyst following. More forthcoming disclosure policies, especially in the investor relations area, attract more analysts, either because an increasing demand for analyst reports or because disclosures reduce analysts' cost of supplying them. On the other side, services of financial analysts become more valuable as accounting practices provide less signals about the firm value. In particular, Lehavy et al. (2011) show that analyst following, the amount of effort incurred to generate analysts' reports and their informativeness are greater for firms with less readable 10-Ks. Presumably, less readable 10-Ks are associated with greater dispersion, lower accuracy and greater overall uncertainty in analysts' earnings forecasts. In conclusion, less readable communication and greater collective effort made by analysts for firms with less readable disclosures is symptom of increasing demand for analyst services (Lehavy et al., 2011).

2.5 ONE KEY DETERMINANT FOR ANALYST COVERAGE: CORPORATE DISCLOSURE

Previously, among the factors affecting analyst coverage, corporate disclosure has been pointed out one of the important determinants that influences the number of analysts following a firm (Lang & Lundholm, 1996). Financial analysts are inside the process of corporate disclosure and they act as filters between the company and investors. Based on the documents disclosed by companies, they elaborate the information provided and make it more “readable” for investors. In this setting, it is worth to discuss what sources of disclosure used by analysts come from.

By definition, corporate disclosure refers to communication of information by insiders of public companies towards outsiders, aimed at communicating firm performance and governance to outside investors (Healy & Palepu , 2001). On one hand, insiders are managers and majority shareholders and, on the other hand, outsiders are investors as well as minority shareholders, regulators, information intermediaries and all other stakeholders. However, corporate managers can still choose which accounting and disclosure policies to adopt. Depending on the policy they adopt, it will result more or less difficult for external users of financial reports to understand the real situation of the company. Companies can communicate with investors principally through two forms of corporate disclosure: mandatory and voluntary disclosure.

Firstly, companies provide **mandatory disclosure** as part of obligatory filing such as periodic reports (10-K, 10-Q) and significant events (8-K). In US, mandatory disclosure, required for public companies, constitutes the core of the securities regulation. In particular, these requirements are spelled out in the Securities Act of 1933, the Exchange Act of 1934 and the Security Exchange Commission (SEC) implements these regulations. According to these regulations, public companies must provide detailed financial information on a regular basis. These include, for instance, annual basis disclosures (10-Ks), quarterly basis disclosures (10-Qs) and any other material information regarding changes in the financial condition or operations of the companies (8-Ks). Financial reporting is the most common form of mandatory disclosure and contains information of the company about the financial position (balance sheet), the result from operations (income statement) and other disclosures (statement of cash flows and the statement of shareholders).

One of the key features of corporate financial reporting is that way in which it is prepared. In particular, financial reporting is prepared on accrual accounting basis and not on cash accounting

basis. Accrual accounting differs from cash accounting because it distinguishes between the recording of costs and benefits associated with economic activities and the actual payment and receipt of cash. Accrual accounting deals with expectations of future cash consequences of current events; therefore, it is subjective and relies on a variety of assumptions made by the management. The primary objective of traditional financial reporting is the disclosure of financial data within the framework of GAAP (Schuster & O'Connell, 2006). In US, Financial Accounting Standards Board (FASB), subject to oversight by the SEC, promulgates Generally Accepted Accounting Principles (GAAP)¹¹. Beyond, giving a common framework and common worldwide “language” for financial reporting, FASB attempts to limit managers’ ability to record similar economic transactions in different ways by making accounting procedures uniform (Palepu et al., 2003). Nevertheless, despite the published information is publicly required it appears to not be enough because mandatory disclosure would provide only a formal and official information to the public. That could be mainly attributable to the fact that mandatory disclosure does not contain all information and factors that affect future facts of the company (*reporting gap*). On one side, inside managers know better about their companies but, on the other side, investors do not because of lack of information. Moreover, increased uniformity from accounting standards, however, comes at the expense of reduced flexibility for managers to reflect genuine business differences in their firm’s financial statements (Palepu, Healy, & Bernard, 2003).

However, one way for managers to improve the credibility of their financial reporting is through **voluntary disclosure**. Accounting rules usually prescribe minimum disclosure requirements, but there are no restrictions for managers from voluntarily providing additional information. Voluntary disclosure may reduce the asymmetric information between companies (who seek capitals) and investors (who provide capitals), thus reducing the agency problem (Jensen & Meckling, 1976). Additional disclosure practices may also enhance the credibility of information provided and help to mitigate the “lemons” problem (Akerlof, 1970). Furthermore, voluntary disclosure provides the opportunity for companies to signal superior quality and attractiveness compared to competitors in the market. For instance, talented managers have an incentive to make voluntarily earnings forecasts to reveal their type (Trueman, Why do managers voluntarily release earnings forecasts?, 1986).

¹¹ Separately, the International Accounting Standard Board (IASB), based in London, has promulgated a set of standards known as International Financial Reporting Standards (IFRS). These standards are quite similar to those in United States (US GAAP), though details vary. Nevertheless, since the Norwalk Agreement in 2002, FASB and IASB have been working at the creation of high-quality uniform set of accounting standards internationally recognized through the convergence of US GAAP and IFRS (IFRS, 2002).

2.5.1 VOLUNTARY DISCLOSURE: FROM GAAP TOWARDS NON-GAAP REPORTING

Given the limitations of accounting standards and traditional financial reporting, firms that wish to communicate effectively with investors or analysts use alternative ways and one of these is by providing voluntary disclosure. Voluntary disclosures can be reported under several ways¹². In this setting, the focus is on non-GAAP reporting.

The coming of non-GAAP reporting goes back to 1990s. During the stock bubble of 1997-2000, financial reporting came into question. Capital markets experienced the entrance of new companies, the explosion in size of already existing firms and the rapid rising of stock. Given this large enthusiasm in the market, accounting rules and SEC regulation about financial reporting took second place, and companies even started to publish false or deceptive financial statements (Lasher, 2008). In parallel, during the same period, the number of “dot coms” and high-tech firms increased significantly as well. In particular, these firms were characterized by high intangibles and income losses, at least in the first fiscal years. At that time, it appeared that the GAAP reporting model was not particularly suited for high-tech firms. Francis and Schipper (1999) argued GAAP earnings tend to be less informative for high-tech firms because these firms invest heavily in intangible assets, which may distort GAAP earnings; therefore, these firms would engage alternative ways in accounting reporting. Financial reporting model was no longer relevant and claims were that traditional earnings “no longer matter” (Penman, 2012).

Based on that, these years witnessed the rising tide of financial measures derived used methods that differed from GAAP¹³. Technology startups and other companies reporting low revenues and high costs did. In particular, these alternative means for accounting were useful to explain their businesses to investors without relying exclusively on traditional GAAP metrics (Covington, 2016). Consistent with this point of view, Bhattacharya et al. (2003) provide evidence that non-GAAP announcements are primarily concentrated in the business service industry, which also includes high-tech related industries. Similarly, Lougee and Marquardt (2004) found that nearly 40.0% of their firms in their sample operated in the high-tech sector and that firms with low

¹² Voluntary disclosures can be reported in the firm’s annual report, in brochures created to describe the firm to investors, in management meetings with analysts, or in investor relations responses to information requests (Palepu et al., 2003)

¹³ Commonly used non-GAAP financial measures have included (a) earnings before interest and taxes (“EBIT”), (b) earnings before interest, taxes, depreciation and amortization (“EBITDA”), (c) adjusted EBITDA, (d) adjusted revenues; (e) adjusted earnings, (f) adjusted earnings per share, (g) free cash flow, (h) core earnings, and (i) funds from operations (“FFO”) (Covington, 2016).

GAAP earnings informativeness are more likely to disclose non-GAAP earnings (pro forma earnings) than other firms.

Other scandals¹⁴ and the coming of these alternative non-GAAP performance measures (noticed especially in the high-tech sector) led to concerns from regulators and standards until the exacerbation and reshaping of the regulation. In particular, the close link between them was the Sarbanes-Oxley Act (SOX), enacted from the US Congress in 2002. Among the several sections illustrated in the SOX, in which the SEC, on behalf of the Congress, had to make new regulations, two sections in particular addressed the issues that financial markets were facing in the facts illustrated earlier. On one side, the SOX, applied to all US listed companies, requires the full disclosure of “all material off-balance sheet transactions, arrangements, obligations (...) that may have a material current or future effect on financial condition (...)” (see section 401 (j) of the Sarbanes-Oxley Act). On the other side, the SOX requires that “pro forma financial information, included in any periodic or other report (...) or in any public disclosure (...), shall be presented in a manner that does not contain an untrue statement of a material fact (...); and reconciles it with the financial condition and results of operations of the issuer under GAAP” (see section 401 (b) of the Sarbanes-Oxley Act).

Recently, non-GAAP reporting has become a common form of **voluntary disclosure**. In US, listed companies are required to follow GAAP for the creation of financial reports, but they have the freedom to release additional reports prepared using non-GAAP principles. Better stated, companies may add to their GAAP reporting within their disclosure mandatory filings. However, before non-GAAP reporting reaches the actual stage, the regulation of non-GAAP reporting moved through several interventions over time. In particular:

- On 4 December 2001, the SEC issued a “cautionary advice”. Through that document, the SEC published a statement regarding the use by listed companies of non-GAAP or “pro-forma” financial information in earnings releases. In particular, the SEC warned public companies who present to public investors their earnings and results of operation using methodologies other than GAAP. The SEC was expressly concerned that non-GAAP financial information carries “no defined meaning and no uniform characteristics”, may “mislead investors if it obscures GAAP results”.

¹⁴ During these years, capital markets experienced some crash and financial scandals like Enron (2001) and WorldCom (2001).

- On 30 July 2002, the Sarbanes-Oxley Act (SOX) was signed into law. In particular, the section 401 (b) of the SOX addressed the SEC to establish rules regulating disclosures of non-GAAP financial measures.
- On 22 January 2003, the SEC proposed finalized rules about what was established in section 401 (b) of the SOX. The new rules include Regulation G, amendment to item 10 of the Regulation S-K and item 2.02 to Form 8-K.
- On 11 January 2010, the SEC issued a Compliance and Disclosure Interpretation to renew its emphasis of non-GAAP financial measures [last update on 17 May 2016].

For over 20 years, regulators and standards have expressed concerns and interest about non-GAAP reporting. The SEC were skeptical at the beginning regarding the use of these measures and promptly the “cautionary advice” was issued. However, the re-shaping in the accounting regulation have brought to proper rules that govern non-GAAP financial reporting (Regulation G, amendment to item 10 of Regulation S-K). Studies on non-GAAP reporting refer usually to non-GAAP earnings.

In the practice, non-GAAP are GAAP earnings adjusted for items viewed as “unusual” or “non-recurring” or non-representative of ongoing operations. The extent literature names non-GAAP earnings as “pro-forma” earnings and as “street earnings”. The former refer to customized earnings disclosed by managers, the latter refer to earnings produced by Wall Street financial analysts. However, they both refer to numbers not calculated in accordance to GAAP and they are used interchangeably in this study.

Managers, together with analysts, are users of non-GAAP earnings. Both managers and analysts may reach differ numbers when calculating nonstandard earnings, because they separately have different perceptions of which items are worth to be included or excluded from the GAAP earnings (McGinty, 2015). Therefore, non-GAAP earnings reported by companies may not match up with Street earnings calculated by analysts. However, the “one-size-fits-all” nature of GAAP earnings pushes managers and analysts to assess the performance through an adjusted measure (Whipple , 2015). These adjustments are:

- Non-recurring item exclusions (special items or one-time items);
- Recurring item exclusions (costs associated with redundancies, restructuring, mergers, integration and divestment of business operations).

With regard to **managers**, items excluded in arriving to their non-GAAP earnings, where most of them are expenses, refer to:

- stock based compensation,
- payroll tax expense related to stock based compensation,
- compensation expense related to contingent retention bonuses,
- acquisition related expense,
- depreciation and amortization,
- foreign exchange effect on revenue,
- purchases of property and equipment/property and equipment purchased under capital lease, unrealized gain/loss on fuel price derivatives,
- deferred loan costs associated with extinguishment of debt,
- gains on divestiture,
- preopening expenses,
- management recruiting expenses,
- management and consulting fees,
- general and administrative expenses,
- litigation expenses,
- integration costs,
- restructuring costs,
- gross profit deferred due to lease accounting (New Constructs, 2015).

With regard to **analysts**, two situations occur. On one side, analysts treat differently the items excluded by managers from non-GAAP earnings. On the other side, analysts are themselves attracted from non-GAAP earnings issued by companies.

When using prediction models to forecast EPS for the fiscal year, analysts adjust non-GAAP earnings to account for non-recurring items. For instance, Bradshaw and Sloan (2002) provide evidence that also analysts, together with managers, increasingly focus on Street earnings by excluding a variety of “special” or “non-cash” items. Similarly, Gu and Chen (2004) find that analysts do not fully reverse all recurring expenses excluded by managers, highlighting the analysts’ ability to differentiate between informative and opportunistic exclusion made by managers.

In the light of the above, the extant literature on non-GAAP earnings concentrates on whether these alternative measures provide, on one side, new information to market participants and, on the other side, whether managers to hide relevant information to mislead investors use these measures. With this in mind, the two main assumptions that justify the disclosure of non-GAAP measures are **informativeness** and **opportunistic behavior**.

With regard to **informativeness**, supporters on non-GAAP reporting highlight the need to remove the size of non-recurring items from GAAP earnings in order to better clarify complex accounting disclosures. Managers do believe that by excluding transitory and non-cash items, non-GAAP earnings improve the assessment for future cash flows and firm value.

Bhattacharya et al. (2003), using a sample of 1,149 actual pro forma earnings in press releases from 1998 to 2000, collect all earnings announcements in which the company disclose diluted non-GAAP earnings that differ from diluted GAAP earnings. They examine the relative informativeness and persistence of pro forma earnings vis-à-vis GAAP operating earnings. Their results suggest that market participants perceive pro forma earnings to be closer to “core earnings” than GAAP operating earnings. Similarly, using a sample of 249 press releases from 1997-99, Lougee and Marquardt (2004) find that firms with low GAAP earnings informativeness are more likely to disclose pro forma earnings than other firms. Both studies use similar proxies to assess the informativeness of non-GAAP earnings. In particular, this proxy refers to market-adjusted returns regressed on earnings surprise¹⁵.

With regard to **opportunistic behavior**, critics argue that such adjustments make earnings not comparable across industries, because of the diversity among discretionary adjustments made by managers. Firstly, someone raised doubt about the comparability and consistency in the financial information, highlighting the difficulty to benchmark a firm’s non-GAAP measure over time. In particular, managers do not use the same adjustments on earnings year by year, implying a sort of discontinuity. Secondly, managers’ behavior may intentionally misreport the actual performance by making ad-hoc and self-serving adjustments. In particular, managers’ opportunistic and incentive behavior push them to exclude certain items from GAAP earnings in arriving at the actual non- GAAP measure, depicting the company in the best way possible.

Doyle, Lundholm & Soliman (2003) investigate the informational properties of non-GAAP earnings for future cash flow from operations. In particular, using a sample of 143,462 firm quarter

¹⁵ Earning surprise (forecast error) = (actual earnings from the earnings announcement – pro forma earnings from the press release).

observations from 1988 to 1999, the items excluded from GAAP earnings to calculate non-GAAP earnings are divided in special items and other items. As managers claim, special items are in general non-recurring and non-related to future cash flows, whereas other items are. However, evidence shows exclusions are negatively associated with future cash flow, indicating their recurring and consuming cash nature, consistent partly with the opportunistic behavior point of view.

Bowen, Davis and Matsumoto (2005) argue that managers emphasize the metric that portrays better firm performance. Using sample of 1,518 earnings releases, they consider two measures of emphasis: the level of emphasis (identifying whether non-GAAP and GAAP earnings are mentioned in the press release¹⁶) and the relative emphasis (difference in placement between non-GAAP and GAAP earnings). They provide evidence that firms reporting non-GAAP profits but GAAP losses place more emphasis on non-GAAP earnings.

Similarly, Wang (2014) documents that managers use presentation arrangements of earnings release opportunistically, by intentionally choosing presentation arrangements allowing the favorable highlighting of firm performance. Assuming managers acting opportunistically, Doyle, Jennings and Soliman (2013) argue the possibility that managers use their discretion to reclassify some actual recurring expenses from their non-GAAP earnings in order to meet or beat analyst benchmarks. In particular, they find evidence that firms are more likely to meet or beat analyst forecasts when using non-GAAP earnings, which usually are higher than normal GAAP earnings¹⁷.

2.5.2 EFFECTS OF REGULATION G AND AMENDMENTS IN NON-GAAP REPORTING

As directed by a specific provision in the Sarbanes-Oxley Act of 2002, the SEC adopted new rules and amendments to address listed companies' disclosure of financial information that is calculated with methodologies different from GAAP. In particular, the SEC adopted a new disclosure regulation, Regulation G, which governs the conditions for use of non-GAAP financial measures by US listed companies

Regulation G defines a non-GAAP financial measure, as “a numerical measure of a registrant’s historical or future financial performance, financial position or cash flows that:

¹⁶ From the highest to the lowest level emphasis: 1) headline, 2) first/second paragraph, 3) third paragraph or later and 4) only in the financial statement at the end of the press release (Bowen et al., 2005).

¹⁷ Evidence show the odds of a firm meeting or beating the consensus analyst forecast are 1.14 times greater for firms using non-GAAP earnings that are higher than GAAP earnings (Doyle et al., 2013).

- excludes amounts, or is subject to adjustments that have the effect of excluding amounts, that are included in the most directly comparable measure calculated and presented in accordance with GAAP¹⁸ in the statement of income, balance sheet or statement of cash flows (or equivalent statements) of the issuer; or
- includes amounts, or is subject to adjustments that have the effect of including amounts, that are excluded from the most directly comparable measure so calculated and presented” (SEC, 2003).

Regulation G requires the registrant to provide a presentation of the most directly comparable financial measure calculated in accordance with GAAP; and a reconciliation of the differences between the non-GAAP financial measure presented and the most directly comparable financial measure calculated in accordance with GAAP” (SEC, 2003). However, the definition of a non-GAAP financial measure excludes:

- operating and other statistical measures (such as unit sales, numbers of employees, numbers of subscribers or numbers of advertisers); and
- ratios or statistical measures calculated using exclusively GAAP financial measures (such as operating margin) or operating measures or other measures that do not constitute non-GAAP financial measures (such as sales per square foot and same store sales); or
- financial measures required to be disclosed by GAAP (such as segment profit or loss and segment total assets and pro forma financial information required by Regulation S-X), SEC rules or a system of regulation of a government or governmental authority or self-regulatory organization that is applicable to a registrant (such as measures of capital or reserves calculated for regulatory purposes) (Skadden, , 2016).

Summing up, Regulation G prohibits the use of non-GAAP measures outside of SEC filing without complementary disclosure of the most directly comparable GAAP measure and a reconciliation of the two financial measures. Together with Regulation G, amendment to item 10 of Regulation S-K requires additional disclosure and impose restrictions regarding the use of non-GAAP measures in SEC filings. In particular, item 10 of Regulation S-K states that whenever one or more non-GAAP financial measures are included in a filing with the Commission, the registrant must present, “with equal or greater prominence”, the most directly comparable GAAP financial

¹⁸ GAAP refers to generally accepted accounting principles in the United States (US GAAP).

measure. Finally, Item 2.02 of Form 8-K, which requires public companies to provide to the SEC earnings releases or announcements that disclose material non-public financial information about completed annual or quarterly fiscal periods.

Based on these events in the regulation, the extant literature provide evidence of what these regulations have brought as consequences along several dimensions. In particular, after the Regulation G, evidences show changes in the *frequency of non-GAAP earnings*, *emphasis of non-GAAP earnings* and *quality of exclusions in non-GAAP earnings*.

Frequency of non-GAAP

Evidence initially shows a decline in the frequency of non-GAAP reporting immediately after the regulation. For instance, using a sample of 2,138 US firms and 42,760 firm-quarter observations¹⁹ from 2000 to 2004, Heflin and Hsu (2008) count the number of times each firm discloses non-GAAP earnings within 12 pre-regulation quarters and 8 post-regulation quarters. In particular, they classify firms as non-GAAP, GAAP, or mixed disclosers in the pre- and (separately) in the post-regulation periods based on how many times they disclose non-GAAP earnings in each period (pre and post Regulation G)²⁰. In the 2,138 sample firms, on one hand, 522 firms (30%) out of 1,727 (either non-GAAP or mixed disclosers in pre-Regulation G) shifted toward **more** GAAP disclosure in the post-Regulation G. On the other hand, 425 firms (25.3%) out of 1683 (either GAAP or mixed disclosers in pre-Regulation G) shifted toward **less** GAAP disclosure in the post-Regulation G. Thus, a higher percentage of firms shifted toward more (by 5%) rather than less GAAP disclosures.

Emphasis on non-GAAP

In a sample of quarterly earnings press releases of 361 S&P500 firms issued between 2001 and 2003²¹, Marques (2010) hand-collects non-GAAP financial measures present in the press releases

¹⁹ The sample consists of all firms with quarterly actual and forecasted EPS data (from IBES), which are proxy of non-GAAP earnings, and GAAP earnings data (from Compustat). The time horizon is from the first quarter of 2000 to the fourth quarter of 2004. In this way, the sample contains observations pre and post-regulation G (Heflin & Hsu, 2008).

²⁰ Criteria for labeling firms as non-GAAP, GAAP or mixed disclosers are based on how many times firms disclose non-GAAP earnings before and after the Regulation G. In particular:

- Non-GAAP discloser: more than or equal to 10 times (pre-regulation G) and more than or equal to 6 times (post-regulation G);
- GAAP discloser: less than or equal to 1 time (pre-regulation G) and less than or equal to 1 time (post-regulation G);
- Mixed disclosers: all other cases different from the two above (Heflin & Hsu, 2008).

²¹ The author uses this time-frame because it covers two separate interventions by the SEC on the disclosure of non-GAAP financial measures (already mentioned in the paragraph 2.2). The first intervention in December 2001 refers to the “cautionary advice” and the second intervention in January 2003 refers to Regulation G (Marques, 2010).

and examines their prominence (emphasis) over three years. With the item 10 (e) of regulation S-K in mind²², on one side, results show that among firms disclosing non-GAAP earnings measures the mean of the prominence of the comparable GAAP number has statistically significantly increased from 3.46 (in 2001) to 4.21 (in 2003). On the other side, there is a decrease in the emphasis given to non-GAAP measures over the same period. Although the decrease in the prominence of non-GAAP measures from 2001 to 2002 is not statistically significant, the difference is statistically significant from 2002 to 2003, with means respectively 4.34 and 3.96. Therefore, these changes may be attributable to the introduction of Regulation G and modifications in Regulation S-K (Marques, 2010).

Quality of exclusions from GAAP earnings SEC

Using a sample of 104,954 earnings quarterly observations²³ drawn from the second quarter of 1998 through the third quarter of 2004, Kolev et al. (2008) assess if the SEC intervention in non-GAAP reporting affects the quality of exclusion components. Exclusions are divided in special items and other exclusions. In particular, the former are generally unrelated to future cash flows (i.e. restructuring charge), but the latter (i.e. amortization of goodwill) are more powerful in predicting future cash flows²⁴. Therefore, in predicting future operating income, they find a significant coefficient that provides evidence other exclusions are more transitory following the SEC intervention²⁵, consistent with SEC interventions restricting the opportunistic behavior of managers.

2.6 DISCLOSURE PRACTICE IN THE US IPOs SETTING

There are significant regulations governing corporate disclosure in the US and especially in particular settings. Consider those companies that decide to go public in the US market. Companies embarking on the IPO process have to comply with many accounting and disclosure

²²

²³ They use IBES actual earnings to proxy the non-GAAP earnings disclosed by managers in the press releases (Kolev et al., 2008).

²⁴ As Doyle et al. (2003) investigate the informational properties of non-GAAP earnings for future cash flows (see sub-paragraph 2.2.2), similarly, Kolev et al. (2008) similarly assess the informativeness of exclusions made in non-GAAP earnings calculation.

²⁵ The meaning transitory refers to “high quality” exclusions or “appropriate” items that are excluded from non-GAAP earnings

requirements that do not apply to private companies. US GAAP dictate many of them and other disclosure requirements are required by the SEC rules and regulations (EY, 2015). The need for a severe compliance with the filings required by the SEC for registrants relies on the fact that the market for initial public offerings (IPOs) is very volatile and risky. In particular, the SEC applies two regulations governing IPOs:

- the Security Act of 1933 (Security Act), which governs the initial offer and the sale of the securities; and
- the Security Exchange Act of 1934 (Exchange Act), which regulates the post-issuance trading of securities, the activities of listed companies and the activities of other market participants, such as underwriters (Latham & Watkins, 2016).

To register an offering, a company files a **registration statement** with the SEC, typically using Form S-1. The **prospectus** is included in the Form S-1 and is used by the company to solicit investors. The prospectus describes the company, the IPO terms and other information that investors may use when deciding whether to invest or not. Since a new public company typically lack of prior reporting history, the information that can inform investors can only be found in the prospectus (SEC, 2013). The purpose of the prospectus is disclosure, hence it must truly and accurately inform potential investors of the nature of the business, and the risks involved. The prospectus must be conformed to the requirements of the Securities Act of 1933.¹ In particular, the Securities Act of 1933 requires that investors receive financial and other significant information concerning securities being offered for public sale; and prohibits deceit, misrepresentations, and other fraud in the sale of securities. In order to achieve these objectives, the disclosure of important financial information becomes relevant through the registration of securities.

The registration statement (Form S-1) consists of two parts. The first part includes essential facts and are required by law to be included in the prospectus. The second part includes additional, but not required, information (PwC, 2011). The **information required** in the prospectus (Part I) refers to prospectus summary, risk factors associated with the business, use of proceeds, dividend policy, capitalization, dividend policy, capitalization, dilution, underwriting and distribution of securities, information about the company's business, financial information²⁶, pro forma, information about the company's officers, directors, and principal shareholders, executive

²⁶ In a Form S-1 registration statement, a company must generally present annual audited financial statements, interim unaudited financial statements (PwC, 2011).

compensation and MD&A. The **information not required** in the prospectus (Part II) regards, for instance, expenses associated with the issuance and distribution of securities, the indemnification of directors and various financial statement schedules (PwC, 2011).

When the registration statement has been completed, the document is filed with the SEC by electronic transmission through EDGAR²⁷. Once the registration statement is filed with the SEC, then the SEC's Corporate Finance Division has 30 days to perform the initial review and provide comments on the registration statement. In particular, the Division determines whether there is full and fair disclosure, and determines whether the documents contain material misstatements or omissions of relevant facts. However, from the first draft to the final version, an S-1 prospectus of a company goes through many revisions. In particular, after reviewing the registration statement, the Division staff usually issues a "comment letter" that sets forth questions, possible deficiencies, suggested revisions and inclusion of additional information. Companies, in turn, reply indicating their responses to the comments and the registrant's offering can become effective as soon as the Division approves all responses to its comment (PwC, 2011).

Nevertheless, while the SEC is examining the prospectus, a "preliminary" prospectus may circulate but it does not yet represent an actual offering. Such type of prospectus is known as "**red herring**", because the word "preliminary" is stamped in red letters. The red herring may be sent to institutions or persons prior to the effective date of the registration statement. However, while in the past companies have occasionally distributed the red herring, companies are now encouraged not to print the red herring until SEC comments have been received facts. In fact, the practice shows that as soon as all SEC comments have been cleared, the company typically prints the red herring and the selling phase begins (PwC, 2011).

2.6.1 RESTRICTION OF DISCLOSURE DURING THE IPO PROCESS AND GUN JUMPING

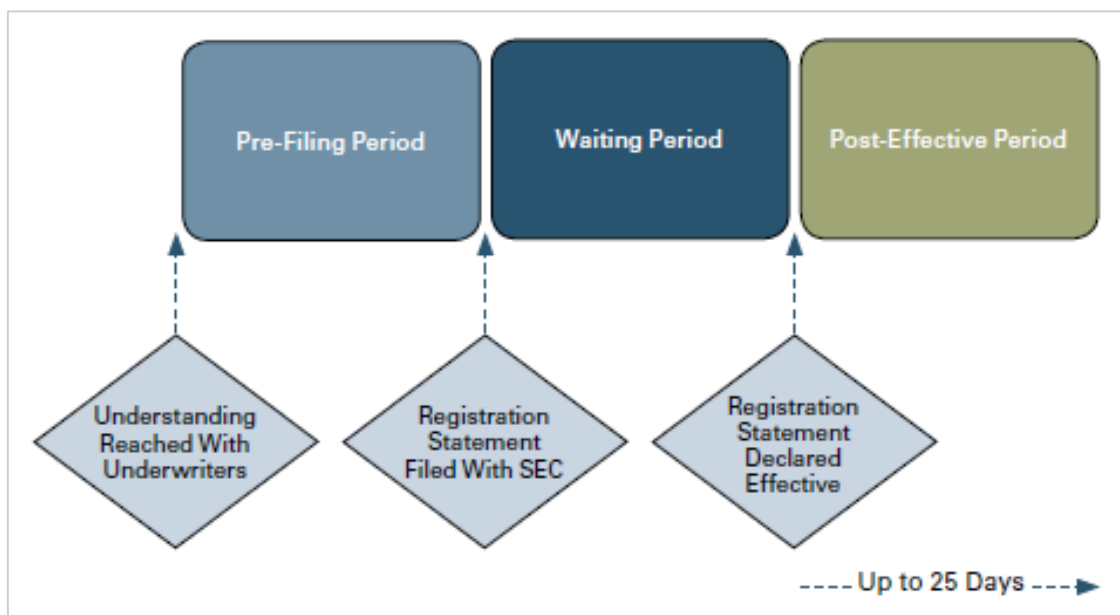
The SEC imposes restrictions on public disclosures, or communication, during the public offering process. In particular, these restrictions aim to prevent issuers and underwriters from attempting to offer or sell securities in the absence of available information. Concerns underlying these restrictions explain that certain communications may cause public interest in a particular stock without providing investors adequate disclosure. The SEC is particularly concerned and

²⁷ EDGAR, the Electronic Data Gathering, Analysis, and Retrieval system, performs automated collection, validation, indexing, acceptance, and forwarding of submissions by companies and others who are required by law to file forms with the US SEC.

possible violations may result in the SEC imposing a “cooling-off” period, in which the IPO process could be delayed and possible sanctions for the company by the SEC may occur (Skadden, Securities offering and gun jumping: what you can do and cannot do, 2012).

Figure 3 illustrates the three stages of the registration process, starting from the *pre-filing period*, going across the *waiting period*, towards the *post-effective period*. The two statuses of the registration statements are illustrated as well, respectively the filing date and the effectiveness date.

Figure 5 - Stages of the offering process



Source: (Skadden, 2012)

Depending on the manner and content, communications made by the company during any of these three stages may result in violations of Section 5 of the Securities Act (Prohibitions relating to interstate commerce and the mails). In particular, communication related violations in the IPO stages are called “gun jumping” and it applies to all forms of communication channels, such as press releases, interviews and even social media.

Firstly, the **quiet or pre-filing period** is that time length between the decision to proceed with a public offering and the actual filing of a registration statement with the SEC. During this period, a potential registrant is subject to restrictions on public disclosure relating to the offering. The pre-filing period begins when the company and its underwriter reach a preliminary understanding to proceed with a public offering. During this period, top management generally will

make a series of presentations covering the company's business and industry, market opportunities and financial questions to the investment community. The underwriter will use these presentations as an opportunity to ask questions and establish their due diligence. However, statements made within 30 days of filing a registration statement that could be considered an attempt to pre-sell the public offering may be considered an illegal prospectus, if no exception or safe harbor applies. This might result in the SEC's delaying of the public offering (Anthony, 2014).

Secondly, the **waiting or pre-effective period** is that time length between the filing date and the effective date of the registration statement. During this period, the company may generally make oral offers, but binding agreements to sell the offered security are not permitted. During this period, among other things, the company begins marketing the offering, through real-time oral offers, including calls to potential investors. However, the SEC do not permit inappropriate marketing, conditioning or "hying" the security before all investors have access to publicly available information. While binding commitments are not permitted, the underwriter can receive indications of interest from potential investors, indicating the price they would be willing to pay and the number of shares they would purchase (book-building process). Once the SEC's comments are resolved, or it is clear that there are no material open issues, the company may do 14-21 day "road show"²⁸ during which management meet with potential investors. (Anthony, 2014).

As it possible to notice, regulations for the restriction of communication during the first two stages of the IPO are well severe and strict. However, the SEC provides a number of "safe harbors" applicable to both pre-filing communication and pre-effective communication periods which specify the types of communications and information that are allowed without being considered "gun jumping."

Broadly speaking, during the pre-filing period, an issuer can:

- take advantage safe harbor for communications that do not refer to the IPO made more than 30 days prior to the filing of the registration statement (Rule 163A);
- release a limited notice regarding the planned IPO (Securities Act Rule 135); and
- release certain factual information (Rule 169) (Anthony, 2014).

In addition, during the waiting period, an issuer can:

²⁸ For potential investors to learn about the company, an underwriter will arrange meetings, called "road shows," with financial analysts, brokers, and potential institutional investors (PwC, 2001).

- publish a limited notice of its upcoming IPO (pursuant to the Securities Act Rule 134 safe harbor);
- circulate a preliminary prospectus (often referred to as a “red herring”) that meets the requirements of Section 10 of the Securities Act, including a price range for the offering;
- conduct a road show and solicit “buy” orders; and
- under certain circumstances, use a free writing prospectus, or FWP²⁹ (Anthony, 2014).

Thirdly, the **post-effective period** confirms the effectiveness of the registration statement (the Division has approved all responses to its comment letters) and goes up to 25 days after the effectiveness of the registration statement. Underwriters and those in charge for distribution of shares confirm sales of the securities by using the final prospectus, in which the final offer price is included. At closing date, the company delivers the registered securities to the underwriter and, in turn, receives payment for the issue (PwC, 2011).

To conclude, the fact that the public offering process takes a long time (about 6-12 months) and that every phase is well articulated it is because the market of IPO is very volatile. Given this particularity of this market, at the same time, it is not easy to assess the value of an IPO, and the presence of misleading information may worsen the entire operation. With this in mind, every phase of the process has the objective to bring the whole operation towards the success and severe restrictions imposed by regulations aim at avoiding material facts and information that may affect negatively investors.

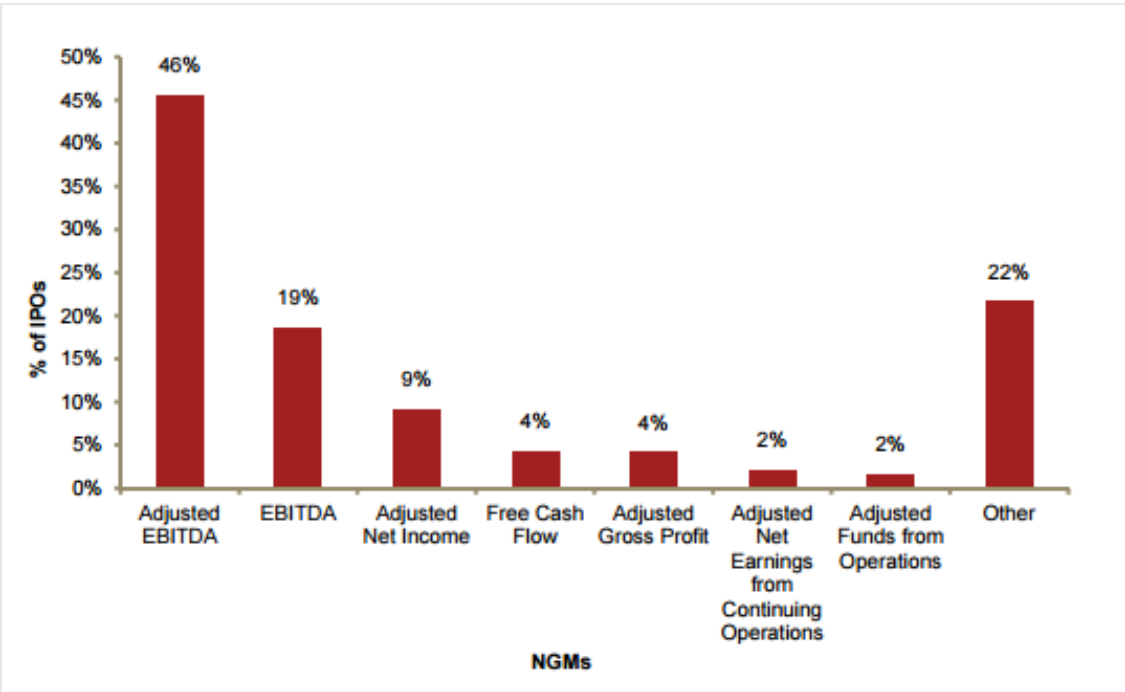
2.6.2 ADDITIONAL FINANCIAL INFORMATION: NON-GAAP FINANCIAL MEASURES

One aspect of S-1 disclosures that recently has attracted a lot of attention is the use of non-GAAP metrics to describe a company’s financial performance (Usvyatsky, 2015). Although not expressly required, in addition to the formal requirements of Regulations S-K and S-X, it has become usual to include additional operational and other metrics in the prospectus. This could be useful to help investors to understand better the issuer’s business. This information is usually included in the prospectus at the end of Selected Financial Data section under a caption labeled “Other Financial Data” (Latham & Watkins, 2016).

²⁹ See Rule 405 under the Securities Act

Companies commonly report non-GAAP earnings as supplement to their reported GAAP earnings because they believe the non-standard measures reflect more accurately their results of operations or financial position (Skadden, 2016). Companies believe that investors use them to value the performance because they contain better information (Bhattacharyaa et al., 2003). A recent survey conducted over 400 IPOs, completed between 2011 and 2013, describes the use of non-GAAP earnings in the prospectus filed with the SEC. Figure 6 displays the most common non-GAAP measures present in the prospectus of the registrants during an IPO.

Figure 6 - 6Most common NGMs used in IPOs



Source: PwC, 2014

Among the seven most frequently non-GAAP measures appearing in the prospectus, earnings before interest, taxes, depreciation and amortization (EBITDA) appears to be the most common non-GAAP measure, together with its adjusted version, Adjusted EBITDA (46%). More surprisingly, 95% of IPO firms that disclose non-GAAP measures in the prospectus (60%), includes three or less non-GAAP numbers (PwC, 2014).

Managers decide to disclose non-GAAP earnings because their effective use can “help companies to shape the way they are viewed by the investment community” by giving insight of how

management views its core business performance (PwC, 2014). For instance, during the book-building process, potential investors, financial analysts and anyone interested in the business may expect to get more information if such nonstandard earnings are provided (PwC, 2014). Nevertheless, when calculating non-GAAP earnings, the broad diversity in adjustments made by managers could complicate comparisons from one company to another one. For instance, the adjusted EBITDA may have different types of exclusions depending on the single company (PwC, 2014).

Another interesting aspect connected with the recent massively use of non-GAAP earnings in the prospectus is the high number of comment letters the SEC Division issued after reviewing the registration statement (Usvyatsky, 2015). Figure 7 summarizes data about IPO companies that received comment letters related to the use of non-GAAP earnings.

Figure 7 - Non-GAAP related comment letters

Non-GAAP Related Comment Letters				
Year	IPOs that Used Non-GAAP Metrics	IPOs that Received Non-GAAP Comment Letters	% Receiving Non-GAAP Letters	Number of SEC Letters (UPLOAD only)
2010	56	35	63%	56
2011	67	39	58%	67
2012	76	31	41%	54
2013	113	58	51%	94
2014*	127	52	41%	84
Total	439	215	49%	355

*Data from 2014 covers January through November.

Source: (Usvyatsky, 2015)

In particular, the percentage of IPO companies receiving non-GAAP earnings related comment letters is 63% in 2010, but it remains at 41% in 2014. Considerable is also the number of IPO companies that issued non-GAAP earnings in the prospectus over time with 56 companies in 2010 compared to 127 in 2014. Surprisingly 40 companies went public in 2014 reported losses under GAAP rules but showed profits under their customized measures (Rapoport, 2015).

With this in mind, the disclosure of non-GAAP earnings metrics in the IPO prospectus has become increasingly common in recent years and a considerable debate exists. On one hand, managers claim that nonstandard measures present a more transparent view of the company. On the other hand, critics argue that adjusted earnings portray an inflated view of future performance and IPO value, with regulators and standard setters expressing concern about the complexity, lack of comparability of these measures across firms, their undue prominence in prospectuses, and their potential to mislead investors (Usvyatsky 2015).

However, there is little academic evidence of non-GAAP disclosure practices in the IPO setting, and the only available evidence shows that on a sample of 696 book-built IPOs completed between 2003 and 2012, 252 of IPO firms (36%) disclose an adjusted measure, alias non-GAAP measures, in the final prospectus. In particular, this disclosure practices rises over time, where 61% of the prospectuses reports non-GAAP earnings compared to 22% in 2003. Moreover, similarly to previous studies³⁰, non-GAAP earnings present in IPO filing are usually higher than GAAP earnings (Brown et al., 2016). The authors find that the disclosure and emphasis of non-GAAP earnings in IPO filing are related to GAAP operating performance. In particular, IPO firms are less likely to report and emphasize non-GAAP earnings when GAAP earnings are extremely good or poor³¹. Finally, non-GAAP IPOs are more underpriced and have higher post-issue return volatility, and that this relation increases with the magnitude of firms' recurring item adjustments, suggesting that during an IPO non-GAAP information is associated with pronounced information uncertainty (Brown et al., 2016).

2.7 RESEARCH QUESTIONS

The accounting and financial literature on analyst coverage and corporate disclosure shows the importance relationship between the two. The role of corporate disclosure is crucial in the IPO process since information asymmetries are more severe for IPO firms than already established public companies. Indeed, IPOs may not have a detailed past record of their performance and

³⁰See Doyle et al., 2003 and Bowen et al., 2005

³¹ There exists an inverted U-shaped relation between GAAP earnings performance and non-GAAP reporting (Brown et al., 2016).

operations because they are younger and partially developed. At the same time, the role of financial analysts as information intermediaries is fundamental in order to collect and analyze information.

With regard to financial analysts, the IPO market could generate great opportunities for them. The literature suggests that more underpriced IPOs tend to attract more analysts (Rajan & Servaes , 1997), especially if analysts exploit underpriced securities to generate more trading with benefits in term of trading commissions. What financial analysts do is forecasting earnings for the fiscal years. Annual earnings forecasts are used then by analysts' clients (brokers, investment banks, investors) when they want information about the stock to decide whether to invest or not.

With regard to corporate disclosure practices in IPO market, non-GAAP earnings reported by IPO registrants in their prospectus is an interesting field to investigate. Lang and Lundholm (1996) argue that more forthcoming corporate disclosure practices attract more analysts. However, part of the non-GAAP earnings literature reputes non-GAAP earnings informative because they reflect the core earnings of the company (informativeness view). Others argue that exclusion made in calculating non-GAAP earnings are inappropriate (opportunistic view). In this setting the informative view can help if non-GAAP earnings are relevant for analysts and in the timing of their forecasts. Different from Lang and Lundholm (1996), it is not investigated the number of analysts following the company, but rather the length of time between the offer date and the date in which the earnings analyst forecast is made (activation date). With this in mind, the following hypothesis is formulated:

H1: The presence of non-GAAP earnings in the prospectus reduce the forecast window between the offer date the date of the single analyst earnings forecast and the offer date.

3. EMPIRICAL EVIDENCE

3.1 DATA AND SAMPLE PROFILE

The sample comprises US IPO deals between January 2003 and December 2012. IPO firms are listed in NASDAQ, NYSE or AMEX. IPO deals are completed and the firms have filed the final prospectus (Form S-1) with the SEC. Before the final construction of the sample, three different procedures data information collections are needed.

IPOs information. Data on IPOs deals completed between 2003 and 2012 are retrieved from Thomson Reuters Eikon using the app Deal Screener. This dataset contains information on IPOs deals completed between 2003 and 2012, including name of the company, issuer ticker symbol, issuer primary SIC, filing date, issue date, listing date, end of the quiet period, book-runner, numbers of managers, gross proceeds, offer price, closing price one day after offer.

Following prior research, IPOs classified as American Depositary Receipts (ADRs), real estate investment trusts (REITs), closed-end funds and reverse leveraged buy-out (LBOs) are eliminated. Offerings whose the offer price is less than \$5 are also excluded.

Non-GAAP IPOs information. Data on whether IPO firms disclose non-GAAP earnings in the final prospectus are collected from an external dataset of a previous study³². On that basis, the sample period begins in 2003 to coincide with the SEC's approval of Regulation G and amendments to Item 10(e) of Regulation S-K (January 2003), which govern the usage of non-GAAP financial measures in public disclosures and documents filed with the SEC, including the prospectus.

Earnings forecasts information. Data on analyst earnings forecasts for the fiscal years are collected from Thomson Reuters Eikon connected with IBES. In particular, each IPO deal is tracked to see if annual analyst earnings forecasts exist up to two fiscal year from the offering date.

³² I thank N. Brown, T. Christensen, A. Menini and T. Steffen for providing me data with regard the sample of IPO firms disclosing non-GAAP earnings between 2003 and 2012.

Issuer ticker symbols are used to retrieve data of analyst earnings forecasts. In particular, ticker symbols are bundled based on the year in which the offering occurs. This dataset includes forecasted earnings per share (EPS) calculated by sell-side analysts for three fiscal years following the offering. It also contains information about the analyst name, brokerage houses name, the date of the forecast and the period year for which the forecast refers.

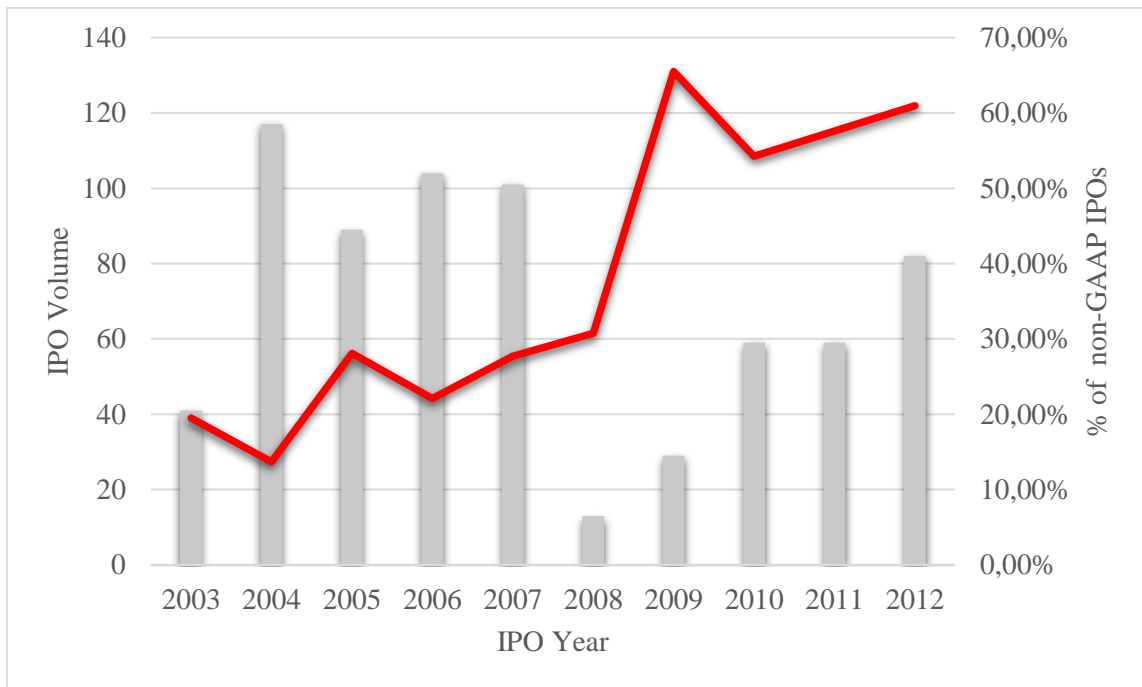
Finally, in order to create a unique dataset, the IPO dataset and non-GAAP dataset are merged to include in the former the variable that indicates the presence of non-GAAP earnings in the prospectus (NONGAAP). The variable (NONGAAP) takes value one for IPOs firm that report non-GAAP earnings number in the prospectus and zero otherwise. Afterwards, earnings forecasts dataset and IPO dataset are merged as well, where data on EPS forecasts calculated by analysts and information about IPO firms are included. The final sample comprises 21,004 analyst EPS forecasts calculated for 691 US IPO deals completed between 2003 and 2012, of which 239 firms disclose non-GAAP earnings in the prospectus.

3.2 DESCRIPTIVE EVIDENCE

3.2.1 US IPO MARKET

With regard to characteristics of IPO firms in the sample, Figure 1 illustrates the frequency of IPO volume and the proportion of IPO firms that report non-GAAP earnings in the final prospectus filed with the SEC over the 2003-2012 period. As it possible to notice, there is an increase in the IPO volume between 2003 and 2007 (post-bubble period), but the market of IPOs undergoes a sharp decline in 2008-2009, because of the financial crisis. In the post-crisis period, a steady post-crisis recovery follows between 2010 and 2012. In particular, non-GAAP earnings reporting increased over the sample period, as more than 60.0% of IPOs report non-GAAP earnings measures in 2012 compared to 19.50% in 2003. This increase is more evident after the financial crisis (2008) and when the SEC issues a Compliance and Disclosure Interpretation of non-GAAP financial measures (2010). It is notable a sharp uptick in 2009, followed by a decrease over 2010 and a steady increase until 2012.

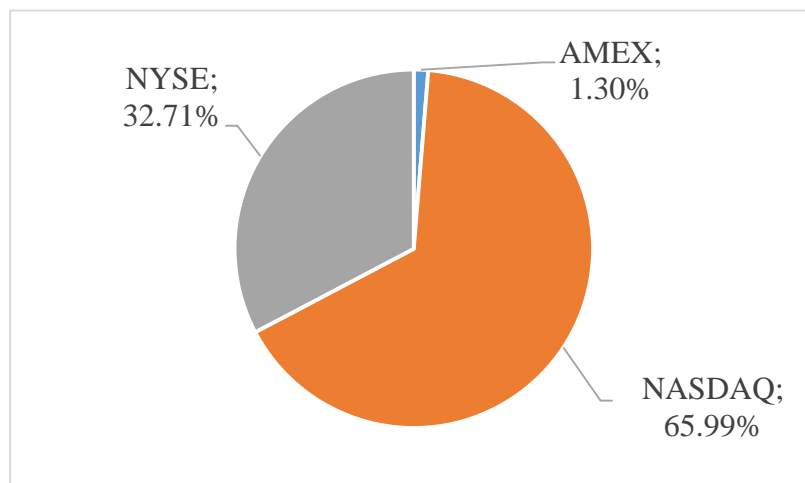
Figure 8 - IPO volume and distribution of non-GAAP earnings disclosure



Source: Personal elaboration

Finally, figure 2 illustrates the stock exchange in which the IPO companies are listed, where the most part of IPOs are listed in NASDAQ (66%), then NYSE (33%) and AMEX (1%).

Figure 9 - Percentage of IPOs listed in AMEX, NASDAQ and NYSE



Source: Personal elaboration

Table 1 provides summary statistics on the full IPOs sample with regard to intrinsic characteristics of the offering over the sample period from 2003 to 2012.

Table 1 – Summary statistics regarding IPOs characteristics

GAAP IPOs								
	N	Mean	SD	p5	p25	p50	p75	p95
Underpricing	440	0.14	0.2	-0.11	0	0.09	0.24	0.51
Gross proceeds	452	125.65	748.47	4	27.6	62.5	95.85	315
Shares offered	452	9.58	30.03	1.75	4.55	6	8.15	22.17
Size	422	291.11	1050.93	7.9	49.1	98.15	221	838.1
Managers	452	5.28	3.39	2	4	4	6	12
Non-GAAP IPOs								
	N	Mean	SD	p5	p25	p50	p75	p95
Underpricing	232	0.13	0.21	-0.09	0	0.09	0.2	0.49
Gross proceeds	239	185.75	364.37	5.4	33.75	92	189	567
Shares offered	239	12.95	15.28	1	5	8.6	15	35
Size	222	835.9	1859.97	24.1	98.3	244.3	664.9	3429.5
Managers	239	6.92	3.96	2	5	6	8	15

Source: Personal elaboration

In particular, the variables summarized are:

- **Underpricing**, that is equal to the percentage change between the offer price and the first-trading day closing price and refers to the first-day return of the IPO.
- **Gross proceeds**, which are equal to the total funds raised by the company.
- **Shares offered**, which are equal to the number of shares offered to the public that are not owned by insiders.
- **Size**, that it is equal to total balance sheet assets, including current assets, long-term investment and funds, net fixed assets, intangible assets and deferred charges, after the offering. Equals total liabilities plus shareholders' equity plus minority interest.
- **Managers**, which are equal to the total number of IPO managers, including lead and co-underwriters.

As it possible to notice, non-GAAP IPOs are, on average, less underpriced than GAAP IPOs, about 13% and 14 % respectively. Moreover, non-GAAP IPOs raised, on average, 187.75 millions of dollars against 125.65 millions of dollars. At the same time, non-GAAP IPOs offered, on average, more shares to public than GAAP IPOs, 12.95 and 9.58 million respectively. It is also evident that non-GAAP IPO are, on average, larger than GAAP IPOs in term of size. Indeed, sizes measure 835.90 and 291.11 respectively for non-GAAP and GAAP IPOs. Finally, non-GAAP IPOs, on average, have higher number of IPO managers (underwriters) involved in the IPO process.

3.2.1 ANALYST FORECASTS IN US IPO MARKET

With regard to the characteristics of earnings forecasts calculated by analysts, table 2 reports the number of first unique analyst activations regarding IPO firms during the sample period from 2003 to 2012. In order to illustrate them, it is necessary the definition of the variable **days to coverage** that it is equal to the difference in trading days between the date of the forecast calculated by the analyst and the date of the offering. Not all days to coverage referred to the analyst are considered, but only the lowest days to coverage. This means that if the analyst has calculated forecasts for the same company in different dates, only the earliest date is considered for the calculation of days to coverage. This date refers to the **activation date** for the analyst. Additionally, analysts may have calculated several EPS forecasts for consecutive fiscal years (FY0, FY1 and FY2) at the activation date, but in this setting only the timing (days to coverage) of the earliest forecast for each active analyst is considered. This procedure requires a collapse of the sample by the variable **days to coverage**, where the new sample structure presents, alongside other variables, only the lowest days to coverage registered for the analyst for a given public offering.

Table 2, together with the number of first unique activations of analysts, includes also 6486 number of total first activations registered within the first two years after the offering (about 523 trading days) over the sample period 2003 - 2012. In particular, 4073 is the number of first activations for offering presenting only GAAP earnings in the prospectus (only GAAP IPOs) and 2413 is the number of first activations registered for offering presenting also non-GAAP earnings in the prospectus (non-GAAP IPOs). Undoubtedly, the number of first unique activations for GAAP IPOs are higher than activations for non-GAAP IPOs registered in the two-year time horizon, because of the higher number of IPOs occurred. In particular, this is due to the number of GAAP IPOs registered in respect to non-GAAP IPOs, 452 against 239 respectively, in which non-

GAAP IPOs are only the 35% of the IPOs sample. However, since anything relevant can be explained by counting the number of activations for each type of offering (GAAP or non-GAAP), ratios between the number of activations made by analysts (within two years from the offering) and the number of type of offering registered for each year are considered. In particular, ten ratios (one for each year) are calculated. These ratios proxy the **degree of interest** addressed to the type of offering by analysts, being either GAAP or non-GAAP offerings. According to the table, these relative ratios show different sizes over time for the two type of offerings (GAAP and non-GAAP).

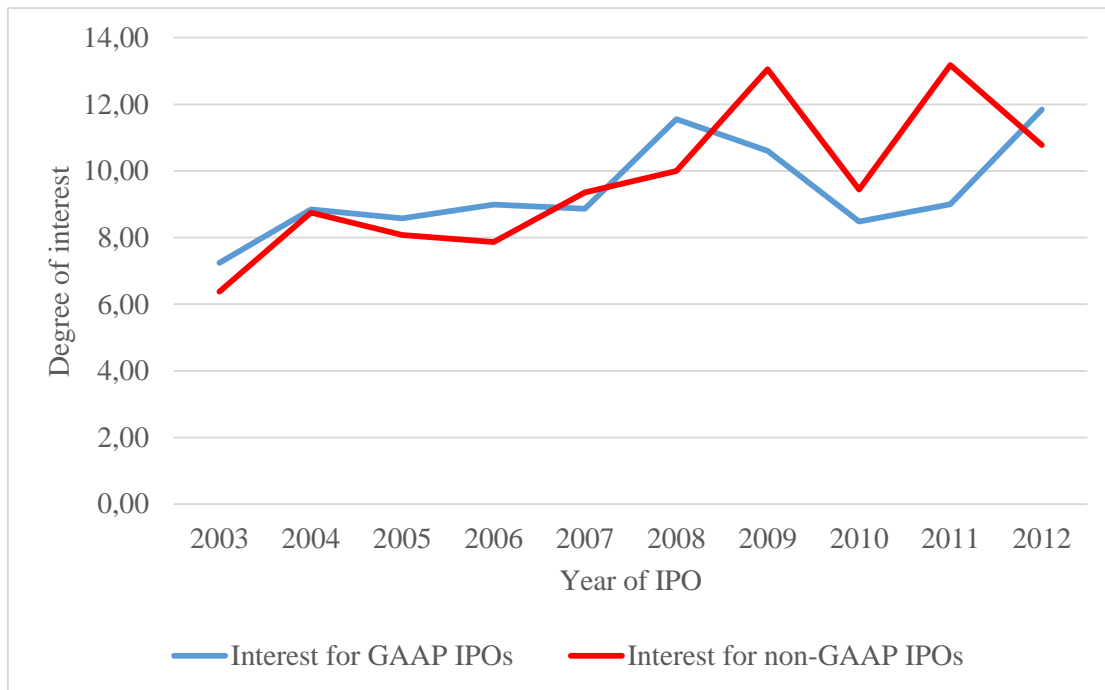
Table 2 – Number of analyst activations and degree of interest with regard to GAAP and non-GAAP IPOs

	N	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
GAAP IPOs											
No. of activations	4073	239	876	549	728	647	104	106	229	216	379
Degree of interest		7.24	8.85	8.58	8.99	8.86	11.56	10.6	8.48	9	11.84
Non-GAAP IPOs											
No. of activations	2413	51	140	202	181	262	40	248	302	448	539
Degree of interest		6.38	8.75	8.08	7.87	9.36	10	13.05	9.44	13.18	10.78
Total activations	6486										

Source: Personal elaboration

Figure 2 displays better this relation, illustrating how analysts' interest for GAAP and non-GAAP offerings varies over time. As it possible to notice, analysts' interest for non-GAAP offerings (red line) is below the interest for GAAP ones (blue line) until 2006. It rises a bit in 2007, but lowers in 2008. However, after 2008, although with a decline in 2010, analysts' interest addressed to non-GAAP IPOs remains above the interest addressed to GAAP IPOs. Finally, in 2012 this trend changes by showing a decline for interest addressed to non-GAAP IPOs. Instead, the opposite effect is registered for analysts' interest to GAAP IPOs in 2012. However, the situation after 2012 is not illustrated; therefore, it is unknown whether this trend persists.

Figure 10 - Analyst degree of interest for non-GAAP and GAAP IPOs



Source: Personal elaboration

Table 3 summaries descriptive statistics for the variables days to coverage and number of unique active analysts covering the company grouped by the type of the offering (GAAP and non-GAAP IPOs). On average, analysts who covers non-GAAP IPOs tend to be active earlier than their peers covering GAAP IPOs, 191.23 trading days and 202.21 (about 11 trading days earlier), respectively. Moreover, on average, non-GAAP IPOs are followed by 10.10 analysts compared to 9.01 for GAAP IPOs (1 more).

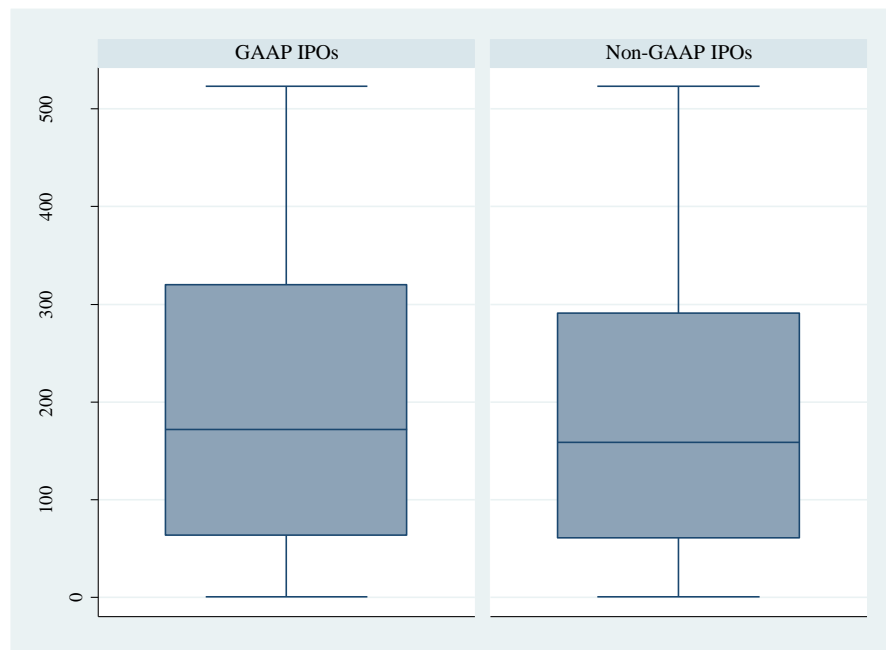
Table 3 – Summary statistics for days to coverage and number of active analysts

	N	Mean	SD	Min	25p	Median	75p	Max
<i>GAAP IPOs</i>								
Days to coverage	4073	202.21	148.36	1	64	172	320	523
No. active analysts	452	9.01	5.97	1	5	8	11	55
<i>Non-GAAP IPOs</i>								
Days to coverage	2413	191.23	145.76	1	61	159	291	523

No. active analysts	239	10.1	5.75	1	6	9	12	33
<i>All IPOs</i>								
Days to coverage	6486	198.12	147.48	1	62	166	314	523
No. active analysts	691	9.39	5.91	1	6	8	11	55

Source: Personal elaboration

Figure 11 -Box plot of the distributions of forecasts over two-year time horizon



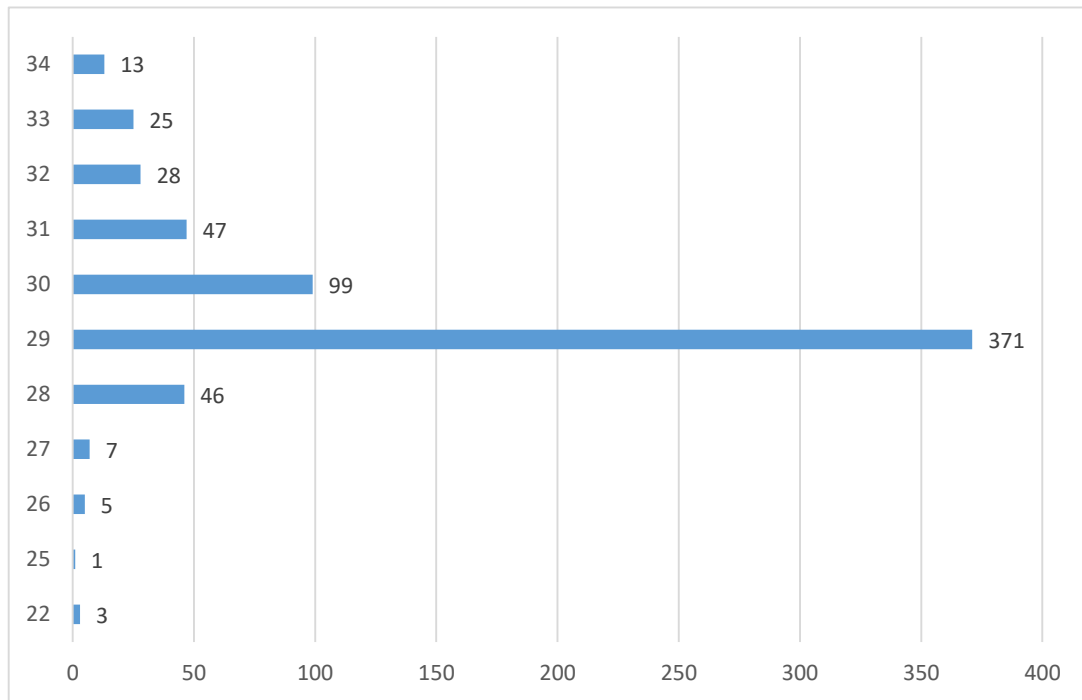
Source: Personal elaboration

Figure 11 illustrates the graphical distribution of the variable days to coverage in a box plot depending on the two types of offering (GAAP and non-GAAP IPOs). This suggests that the median (50th percentile) for days to coverage for non-GAAP IPOs, as well as the 25th and 75th percentiles³³, are below the level of median, 25th and 75th percentiles for GAAP IPOs. This indicates, as described in table 2, that analysts are active earlier when they start to cover non-GAAP IPO stocks over the two years sample horizon.

³³ The 25th percentile is the lower line of the box and the 75th is defined by the upper line of the box. The 50th percentile (median) is defined by the middle line in each box.

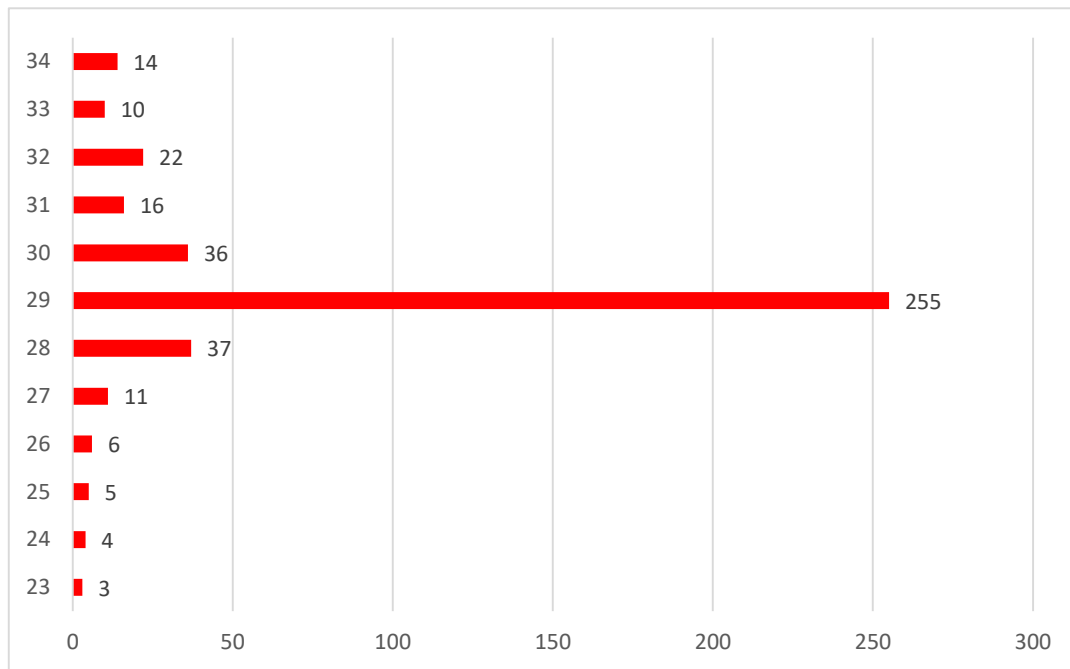
To investigate whether forecasts are concentrated around particular dates within the two-year time horizon, days to coverage registered in the sample for each analyst (from 0 to 523 trading days) are sorted and the numbers of times in which the same days to coverage appear in the sample is counted. In this way, it is possible to show the absolute frequency of analyst activations in several time lengths from the date of the offering. In particular, it has been seen, how many days after the offering date the highest absolute frequency of activations occurs. This finding procedure suggests that for both GAAP and non-GAAP IPOs, analysts calculate EPS forecasts the most on the 29th trading day after the offering.

Figure 12 - Analyst activity for GAAP IPOs around the end of the quiet period



Source: Personal elaboration

Figure 13 - Analyst activity for non-GAAP IPOs around the end of the quiet period



Source: Personal elaboration

Interestingly, the 29th trading day correspond to the date of the end of the quiet period for the IPO company (40 calendar days after the offering). With this in mind, - 5 and +5 trading days after the 29th trading day after the offering have been. In particular, the bars graphs for GAAP and GAAP IPOs, respectively in figure 4 and 5, illustrate the activity of analysts around this particular day.

As it possible to notice, in both figure 4 and 5, analyst activity is lower in days preceding the end of the quiet period. Indeed, analysts are active the most one trading day before and after the end of the quiet period. The highest peak occurs proper on the 29th trading day (371 activations and 255 activations, respectively, for GAAP and non-GAAP IPOs).

3.3 EMPIRICAL RESULTS

3.3.1 UNIVARIATE TESTS

The hypothesis examined is whether the presence of non-GAAP earnings in the prospectus influences the forecast timing for analysts who calculate EPS forecasts for fiscal years after the offering. In particular, the tested hypothesis is whether analysts covering non-GAAP IPO firms disclose forecasts earlier than analysts covering only GAAP IPOs.

To test this hypothesis, the variable **analyst ranking** is defined in order to conduct the analysis. In particular, analyst ranking is the variable that ranks analysts from the earliest to the latest depending on the date in which they are active for the first time. In particular, the earliest (latest) analyst is the analyst whose days to coverage are lower (higher) compared to other analysts having higher (lower) position in the ranking for the same IPO firm. In this study, analyst ranking goes from one to ten, where ranking one pools earliest analysts and ranking ten pools latest analysts. In this setting, analyst ranking serves as tool to examine whether the variable days to coverage shows difference in mean given the variable NONGAAP. To start, days to coverage for analysts in ranking one are tested to see whether they present significant difference in mean, if they are grouped by the variable NONGAAP. Afterwards, the same procedure is made for differences in mean days to coverage for analysts in ranking two, and so on, up to days to coverage for analysts in ranking ten.

Table 4 shows statistical t-tests for the procedure just described within two year time horizon after the offering. In particular, the first column piles analyst ranking from one to ten. Then, the second column piles the number of companies that are covered at least by the number of analysts present in the ranking in the same row. As it possible to notice, when ranking rises the number of companies decreases. In other words, in the first row, 691 companies (all companies present in the sample) are covered at least by one analyst. Instead, the last row suggests that 263 IPO companies are covered at least by 10 analysts. Logically when ranking rises the mean for days to coverage (average number of trading days before the analyst becomes active) rises due to activation dates for analyst that are more distant from the date of the offering. According to table 5, difference in mean for the first, second, third and tenth ranking is not significantly greater than zero.

Table 4 - Univariate test for differences in mean for days to coverage within two years from the offering

Ranking	N	GAAP						Non- GAAP						Test of differences	
		n	Mean	SD	25th	Median	75th	n	Mean	SD	25th	Median	75th	Difference	t-test
1	691	452	61.80	56.82	29	30	85	239	64.08	53.90	29	30	99	-2.28	-0.511
2	682	444	82.93	69.70	29	61.5	115	238	84.41	62.96	29	63.5	134	-1.47	-0.272
3	668	433	102.81	79.86	31	85	148	235	100.32	79.15	29	81	144	2.49	0.386
4	644	416	141.49	106.36	47	115	195.5	228	122.83	100.76	36	108	166	18.66	2.169 **
5	594	378	193.85	124.04	95	173.5	284	216	159.06	116.87	61	143.5	201.5	34.79	3.358 ***
6	523	330	239.28	135.31	126	236	334	193	181.94	122.04	81	159	258	57.33	4.845 ***
7	461	286	270.81	128.33	174	284	362	175	213.42	124.91	125	194	293	57.39	4.707 ***
8	395	245	291.19	127.73	211	305	388	150	238.61	124.79	151	234	331	52.58	4.005 ***
9	326	197	301.73	301.73	228	312	396	129	274.19	274.19	174	268	378	27.53	1.899 **
10	263	155	307.63	307.63	232	324	400	108	290.08	290.08	183	284	404	17.54	1.101

Source: Personal elaboration

In particular, in the first two rankings analysts who cover non-GAAP IPO securities tend, on average, to become active later than analysts who cover GAAP IPO stocks. Conversely, analysts who cover non-GAAP stocks and belong from the fourth to the ninth ranking tend to become active for the first time before analysts who cover GAAP-stocks. This suggests that on average, for IPO firms disclosing non-GAAP earnings in the prospectus the fourth, fifth, sixth, seventh, eighth and ninth analyst in the ranking is active earlier than other analysts in the same ranking who cover GAAP IPOs. As it possible to notice, the fourth analyst who covers a non-GAAP IPO calculates his forecasts 18.66 earlier than his peer who cover a GAAP IPO. This is significant up to the ninth analyst in the ranking.

The disclosure of non-GAAP earnings in the prospectus is likely to be influenced by the size of the firm (see Brown et al, 2016). Given that, it is opportune to investigate whether non-GAAP IPO firms are larger in size than GAAP IPO firms. In particular, table 5 confirms the existence of difference in mean for size and suggests that in the sample non-GAAP disclosers are those IPO firms that are larger in term of size. Although, the full sample of IPOs comprises 691 companies, only 644 companies present the measure of the size in the dataset (47 missing value for size).

Table 5 - Univariate tests of difference in mean for size of IPO firms

GAAP			non-GAAP			Test of difference	
N	Mean	SD	N	Mean	SD	Difference	t-test
422	291.11	1050.93	222	835.90	1859.97	-544.79	-4.75***

Source: Personal elaboration

In this setting, by grouping IPO firms in GAAP and non-GAAP disclosers depending on their size, it is possible to test whether analysts from several rankings (from one to ten) react differently when deciding the timing of their forecasts. In this study, IPO firms are grouped within quartiles of the size and difference in mean are tested depending on the ranking of the analyst and the several quartiles for the size. However, table 6 shows that the number of non-GAAP IPO firms are less than GAAP IPOs in the first three quartiles. Interestingly, in the fourth quartiles the situation is opposite where there are 95 non-GAAP IPOs against 66 GAAP IPOs. Finally, as it possible to notice, moving from the first quartile to the second, then from the second to the third,

until the fourth quartile, the percentage of non-GAAP IPOs in each quartile rises from 17.40% (quartile 1 for size) to 59.00% (quartile 4 for size).

Table 6 - Composition of quartiles for size of IPO firms

Quartile for size	GAAP IPOs		non-GAAP IPOs		All IPOs
1	133	(82.60%)	28	(17.40%)	161
2	117	(72.67%)	44	(27.33%)	161
3	106	(65.84%)	55	(34.16%)	161
4	66	(41.00%)	95	(59.00%)	161
Total	422		222		644

Source: Personal elaboration

In this setting, further t-tests focus to verify the significance of the difference in mean in the timeliness of analyst activations between those analysts covering non-GAAP IPO stocks and those ones covering GAAP stock, but considering separately each quartile for size. From table 7, considering the first quartile for size, it emerges significant difference in mean in the sixth and seventh ranking.

Table 7 - Univariate test of days to coverage within quartile 1 for size

Ranking	N	GAAP IPOs		non-GAAP IPOs		Test of differences	
		n	Mean	n	Mean	Difference	t-test
1	161	133	67.92	28	71.07	-3.15	-0.23
2	153	126	97.18	27	100.33	-94.33	-0.17
3	143	117	118.90	26	137.73	-18.83	-0.87
4	134	110	162.74	24	157.75	4.99	0.18
5	112	93	224.66	19	197.05	27.60	0.84
6	88	74	269.77	14	201.57	68.20	1.88 **
7	78	64	314.47	14	265.28	49.19	1.38 *
8	63	51	324.61	12	309.67	14.94	0.39
9	44	37	328.67	7	348.14	-19.47	-0.38
10	33	28	339.25	5	390.20	-50.95	-0.78

Source: Personal elaboration

In particular, 14 non-GAAP IPOs within the first quartile of size received coverage by the sixth and seventh analyst quicker than the other 74 GAAP IPOs. This means that the sixth and seventh analyst in the ranking who cover non-GAAP IPO stocks, on average, is active for the first time respectively 68.20 and 49.19 days before analysts covering GAAP stocks.

Similarly, in table 8, difference in mean is significant from the fourth to the eighth ranking when considering the second quartile for the size of the firm. Therefore, the fourth analyst, and the following analysts, until the eighth analyst in the ranking, on average, cover non-GAAP IPO firms earlier for firms grouped within the second quartile.

Table 8 - Univariate test of days to coverage within quartile 2 for size

Ranking	N	GAAP IPOs		non-GAAP IPOs		Test of differences	
		n	Mean	n	Mean	Difference	t-test
1	161	117	54.16	44	67.39	49.73	-1.5
2	161	117	74.86	44	85.98	-11.11	-1.03
3	160	116	99.43	44	92.89	6.54	0.5
4	154	111	150.06	43	116.37	33.69	1.86 **
5	142	102	216.73	40	136.45	80.28	3.68 ***
6	126	91	267.53	35	190.23	77.3	3.08 ***
7	109	77	301.65	32	227.69	73.96	3.05 **
8	89	62	319.31	27	262.85	56.45	2.14 *
9	75	51	336.55	24	307.13	29.42	1.04
10	54	35	341.23	19	334.05	7.18	0.24

Source: Personal elaboration

Somewhat different is present for those IPO firms grouped in the third quartile for the size. In particular, table 9 shows no significant difference in mean greater than zero, but rather an opposite effect of the variable NONGAAP suggesting that forecasts for non-GAAP IPOs by analysts are delayed.

Table 9 - Univariate test of days to coverage within quartile 3 for size

		GAAP IPOs	non-GAAP IPOs	Test of differences
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Ranking	N	n	Mean	n	Mean	Difference	t-test
1	161	106	58.14	55	75.60	-17.46	-2.06
2	161	106	77.51	55	91.65	-14.15	-1.59
3	159	105	94.39	54	109.67	-15.28	-1.44
4	155	102	126.35	53	134.74	-8.38	-0.51
5	145	94	161.23	51	182.22	-20.98	-1.03
6	133	87	208.43	46	210.91	-2.49	-0.11
7	118	78	243.47	40	230.18	13.30	0.55
8	106	70	266.39	36	263.53	2.86	0.11
9	92	58	283.55	34	311.88	-28.33	-1.09
10	73	47	301.34	26	319.31	-17.97	-0.65

Source: Personal elaboration

Interestingly, when considering the fourth quartile for the size, the earliest analyst, who belongs to the first ranking, starts to cover non-GAAP IPOs, on average, 17.03 days earlier than analysts covering GAAP IPOs. Furthermore, other significant differences in mean are present when considering the sixth, seventh and eighth analyst in the ranking.

Table 10 - Univariate test of days to coverage within quartile 4 for size

Ranking	N	GAAP IPOs		non-GAAP IPOs		Test of differences	
		n	Mean	n	Mean	Difference	t-test
1	161	66	74.97	95	57.94	17.03	1.84 **
2	161	66	88.11	95	78.37	9.74	0.92
3	160	66	107.06	94	92.48	14.58	1.11
4	156	64	127.31	92	114.37	12.94	0.85
5	152	62	164.39	90	151.99	12.40	0.68
6	140	58	213.02	82	156.11	56.91	2.61 ***
7	123	49	228.53	74	181.24	47.29	2.12 **
8	111	45	256.31	66	211.17	45.14	1.75 **
9	94	37	257.95	57	236.96	20.98	0.72
10	83	32	252.91	51	257.75	-4.84	-0.16

Source: Personal elaboration

3.3.2 REGRESSION ANALYSIS

To investigate better the magnitude of the main explanatory variable NONGAAP, which takes value 1 if the IPO firm discloses non-GAAP earnings in the prospectus and zero otherwise, a multivariate regression model is developed. In particular, it is tested whether non-GAAP disclosure and other variables explain the timing of forecasts calculated by analysts.

Table 11-Multivariate regression analysis of days to coverage

Regression of days to coverage				
	Model 1	Model 2	Model 3	Model 4
Constant	184.63	186.55	179.57	178.77
t-statistic	(3.47)***	(3.51)***	(3.36)***	(-3.30)
Non-GAAP Dummy	-12.82	-10.38	-11.15	-8.69
t-statistic	(-2.96)***	(2.37)**	(-2.54)	(-1.96)
Log_e (Size)	-5.63	-6.41	-3.72	-1.56
t-statistic	(-1.91)*	(-2.13)	(-1.19)	(-0.49)
Underpricing		-10.07	-12.81	-12.34
t-statistic		(-1.09)	(-1.38)	(-1.33)
Shares offered			-0.23	-0.05
t-statistics			(-3.32)	(-0.60)
Managers				-2.71
t-statistic				(-3.94)
Quartile Size Dummy	YES	YES	YES	YES
Number of analysts Dummy	YES	YES	YES	YES
Observations	6028	5881	5881	5881
R-squared	0.0429	0.0441	0.0455	0.0479

Source: Personal elaboration

Table 11 shows regression analysis conducted in a multivariate setting. Consistent with the supposed hypothesis, all four models show that IPO firms with non-GAAP earnings as additional

information in the prospectus lowers the days before the first activation of analysts compared to only GAAP earnings IPOs. In particular, the coefficient of the dummy variable NONGAAP is significantly negative. This result suggests that analysts are active earlier in calculating their earnings forecasts for the first time (activation date) when IPO firms have a richer information prospectus, defined by non-GAAP earnings in the additional information of the Form S-1. Thus, voluntary disclosure, such as non-GAAP earnings influences the timing of forecasts.

Model 1 includes the coefficients of the dummy variable NONGAAP and LOG_SIZE (logarithm of size). The coefficient of the variable NONGAAP is -12.82, suggesting that analyst are active nearly 13 days earlier when they start to cover non-GAAP IPOs stocks. Furthermore the coefficient of the variable LOG_SIZE is significant and negative (- 5.63), suggesting that larger firms are followed quicker by analysts.

Model 2 includes also the coefficient of the variable UNDERPRICING equal to -10.07. This tells the more underpriced IPOs are followed earlier but analysts, but this relation is not statistically significant. The coefficients of the variables NONGAAP and LOG_SIZE are still negative and significant, respectively -10.38 and 6.41.

Model 3 adds the coefficient of the variable SHARES_OFFERED. This is significant and equal to 0.23, but quite low to make predictions about the effect of the shares sold and timing of forecasts for analysts. However, the main variable NONGAAP is still significant and equals to - 11.15, whereas the coefficient for the variable LOG_SIZE is not significant anymore, even though negative.

Model 4 adds the last control variable to the regression analysis. The variable MANAGERS gives the number of IPO managers (lead and co-underwriters) involved in the IPO process. Interestingly, IPO firms with more managers or investment bankers who sold shares to the public lowers days to coverage for analysts. In particular, the coefficient for the variable MANAGERS is significant and negative (-2.71). This suggests the attention for analysts for IPOs firms with a higher number of IPO managers, that it is reflected then in the timing of their forecasts.

The goodness of fit, expressed by the R-squared, improves whenever a control variable is included in the model. In particular, it measures 4.30%, 4.41%, 4.55% and 4.80% for model 1, model 2, model 3 and model 4, respectively. Finally, models are fitted across 5881 observations, except for model 1 fitted across 6028 observations. This is due to missing value for variables UNDERPRICING, SHARES_OFFERED and MANAGERS. Finally, in all four models, QUARTILE_SIZE and NUMBER_ANALYSTS are used as dummy control variables. The former

refers to the quartile the IPO belongs to with regard to its size, whereas the former refers to the total number of analysts that followed the IPO company within two years

4. CONCLUSIONS

The current study highlights the attention of analyst activity in the particular business situation of initial public offering (IPO) and when certain corporate information is provided in the IPO prospectus. Considering the particular nature of this market, being very volatile and risky, financial analysts may take advantage through looking at those securities on which they have relevant information, both private and public, in order to make their calculations of earnings forecasts. Logically, the larger the amount of information available to analysts the more accurate forecasts are. In particular, in this study, the situation in which IPO firms that disclose additional information in their prospectus was examined, by including, beyond GAAP earnings, also non-GAAP earnings aimed at supplementing and improving the description of the actual performance of the company. This is an interesting and novel setting to investigate as more forthcoming corporate disclosure practice attract analysts' attention on the stock (Lang & Lundholm, 1996). Although the accuracy of analysts' forecasts is not examined, however it is provided a first evidence about the timing of forecasts for analysts conditional to the presence of non-GAAP earnings included in the prospectus at the end of Selected Financial Data section under the caption labeled "Other Financial Data".

The data shows that over a sample of 691 IPO firms, nearly 35% disclose non-GAAP earnings in the final prospectus. Through the conductance of univariate tests of differences it was found that the number of days before analysts calculate their first forecast is lower when analysts start to cover IPO firms that disclose non-GAAP earnings. In particular, IPO firms that disclose non-GAAP earnings are covered earlier by analysts that belong from the 4th to the 9th ranking, if not controlling for size. Moreover, when IPO firms are grouped accordingly to quartiles of sizes, the number of days before the first forecast was calculated by analysts in the first ranking are lower when analysts cover non-GAAP IPO stocks.

If this study was to be replicated, it may be useful to investigate for the accuracy of forecasts made by analysts conditional to non-GAAP earnings information contained in the prospectus, as this is a variable that the current study did not control for. In particular, if the accuracy is higher when analysts calculate forecasts in dates close to the date of the offering, as analysts are likely to rely only on the information contained in the prospectus, which contains non-GAAP earnings.

In conclusion, by conducting a regression analysis, the evidence suggests that non-GAAP earnings are capable to affect the timing of forecasts for analysts. Better stated, IPOs that disclose non-GAAP earnings receive coverage quicker and by a higher number of analysts. This is consistent with the hypothesis formulated in which the presence of non-GAAP earnings in the prospectus reduce the forecast window between the offer date and the date of the single analyst earnings forecast. It is confirmed also that non-GAAP IPOs are larger in size (Brown et al., 2016).

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