MARKET MISVALUATION
and EARNINGS MANAGEMENT

Evidence from the Italian financial market

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Ai miei genitori,
che mi hanno sempre indicato la luce nei momenti bui.

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I. Introduction

Capital markets rely on credible financial accounting information. Good quality in financial reporting helps investor to better assess firm value and performance and to make improved investment decisions. Financial scandals in the United States and Europe (like Enron, Worldcom, and Parmalat) have highlighted the importance of financial reporting quality, with a special emphasis on earnings quality.

Due to the strong relationship between earnings quality and the financial scandals happened in the last ten years, earnings management has become a pressing issue in accounting academic debate and in practice. The corporate scandals of the late 1990s and the early 2000s, in United States and in Europe, were arguably the result of some extreme form of earnings management activity[1].

Previous researches have shown that managers engage in earnings management for various reasons and the proclivity of management to manipulate earnings information has increased over time (Brown, 2001; Lopez and Rees, 2001; Barton et al., 2002). Several evidences indicate that earnings manipulation has become widespread. Graham, Harvey and Rajgopal (2004), for example, in a survey on 401 CFO asked the following question: *"Near the end of the quarter, it looks like your company might come in below the desired earnings target. Within what is permitted by GAAP, which the following choice might your company make?"*. They find 80 percent of CFOs saying that their companies are willing to delay

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[1] Earnings management is a phenomenon clearly defined from the academic literature: *"...earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers"* (Haley and Wahlen, 1999). The extreme form of earnings management (financial fraud), instead, is defined from the professional literature as: *"...the deliberate misrepresentation of the financial condition of the enterprise accomplished through the intentional misstatement or omission of amount or disclosures in the financial statement to deceive financial statement users"* (Certified Fraud Examiners, 1993). Both earnings management and fraud have the same intention to device investors. The difference is in the meaning: while "management" is usually within GAAP fraud deviates from this.

discretionary spending such as R&D, advertising and maintenance, and over 55 percent saying that their company would knowingly sacrifice a small value by delaying the start of projects. Almost 40 percent would book revenues now, rather than next quarter, or provide incentives for customer to by now. The reasons for earnings management are different and range from the intention to satisfy analysts' expectations, to realize bonuses (so, reasons related to compensation issue), to maintain competitive position within the financial market, or reasons related to a new company's acquisition.

Jensen in 2005 theoretically introduced hypotheses about the overvalued companies. In Jensen's argument, managers of overvalued companies face two options. First, the manager can communicate to the market that he can not deliver the expected operating performance to justify the inflated stock price either by telling the market outright or by waiting until the next reporting date and, then, they report a negative performance surprise. This option has potential to negative affect the manager's compensation and career. The second option, instead, includes action to inflate reported performance to try to justify the inflated stock price. Such actions could be overinvesting through acquisitions or expansions, commitment of frauds, and managing earnings. By doing so, the manager hopes to delay the negative compensation and career consequences, destroying substantial shareholder value in the long run.

According to Jensen's prediction, as a firm becomes more overvalued the pressure to meet increasingly unrealistic earnings targets becomes greater, encouraging managers to act in a ways that are detrimental in the long run value of their firms.

Based on this theoretical framework and on previous empirical studies done in this field, the present research is organized around the following questions: Is there any relation between firm's market valuation and earnings management? Do the managers of overvalued (undervalued) companies have strong incentive to continue overvaluation (undervaluation) engaging in earnings management?

Following Houmes and Skantz (2010) we assume as basic idea that market price drives reported earnings opposed to the standard model where reported earnings drives market price. We hypothesize that there will be a positive relation between firm's market value and earnings management and, in particular, that in case of increasing in firm's market value managers have the incentive to engage in income-increasing earnings management.

We also hypothesize that managers of companies characterized by a decreasing in firm's market value engage in income-decreasing earnings management, demonstrating that managers of undervalue companies may sustain the undervaluation to help themselves through accounting manipulation to correct accounting trickery.

As primary test, we regress the change in total accruals from year t-1 to year t on factors known to be associated with accruals (firm size, leverage and company's performance) and change in firm's market valuation from year t-1 to year t (measured through market-to-book ratio).

We find that an increase in firm's market value (overvaluation) is associated with income-increasing earnings management (measured considering positive change in total accruals) and, a decreasing in firm's market value (undervaluation) is associated with income-decreasing earnings management (measured considering negative change in total accruals). The first finding empirically demonstrates the validity of the Jensen's hypothesis of the overvalued company in the Italian market.

Instead, the positive relation between a decreasing in firm' s market value and income-decreasing earnings management represents, in our opinion, the managers' incentive in correcting previous upward accrual manipulation, avoiding to engage in the extreme case of earnings management (non-GAAP earnings management) that is likely to imply accounting frauds (related to Badertscher (2010) study about the choice of alternative earnings management mechanism).

Another set of test examines the robustness of the primary results. In particular, we run the analysis considering different sample composition in

order to verify if the primary finding could be driven by different time series analysis. This robustness check allows, at the same time, to control for the possible bias in the results due to the IFRS introduction in 2005.

The second and most important test is related to the possible bias due to the effect of sales growth in the primary test. As we will explain, the primary test could be influenced by sales growth that may have an impact on both dependent (change in total accruals from year t-1 to year t) and independent (change in firm's market value from year t-1 to year t) variables. To control for this possible bias, we develop the empirical analysis considering change in discretionary accruals (as estimated through Jones model (1991)) as dependent variables rather than change in total accruals.

Our study provides useful information on the relation between firm's market value and earnings management and makes several contributions to the literature.

First, most researches so far have been carried out using US data. To our knowledge no one study has been conducted considering insider system countries that differ from the US (or UK) one. In this study, we provide evidence on the relation under analysis for the Italian market with the ambition to extend the empirical analysis to other European countries in order to verify if our findings could be generalized to others insider system (such as, Germany, France, Spain, etc…etc…).

Second, the study investigates a highly significant and yet under-researched segment of the economy. It will contribute to the agency costs of overvalued equity literature framework looking into the broad issue of the complex interaction between firm's market overvaluation (undervaluation) and earnings management direction, analysing both income-increasing and income-decreasing phenomena. The evidence and the potential results of the study could be relevant in order to understand how managers play earnings management *"game"* considering different capital market structure from the US one and, in which extant it is important to improve the efficiency of securities markets in order to protect investor' interest.

The remainder of the research is organized as following. In section II the paper reviews the literature; in section III we develop our hypothesis. In section VI we briefly introduce the Italian institutional contest. Section V explains the sample, data and the variables used in the empirical analysis, while section VI explains the regression models and provides the descriptive statistics. Section VII illustrates the empirical results and in section VIII we conclude.

II. LITERATURE REVIEW

1. Classical and behavioural finance theory overview

1.1. Classical finance theory

Traditional finance theory stands directly on the notion of the "rationale man". The rational construct assumes that individuals, both investors and managers, are *"capable of understanding vastly complex puzzles and conduct endless instantaneous optimizations"* (Montier, 2002).

On average, these people make unbiased decisions and maximize their self-interest. Any individual who makes suboptimal decisions would be punished through poor outcomes. Over time, people would either learn to make better decisions or leave the marketplace. Also, any mistake that market participants make are not correlated with each other; thus the mistakes do not have the strength to affect market prices (Baker and Nofsinger, 2010).

This rationality of market participants feed into one of the classic theories of standard finance, the efficient market hypothesis (EMH). The efficient market hypothesis has been the cornerstone theory on market behaviour since Eugen Fama has developed it in the 1960s till the 1990s, when the behavioural finance started emerging with the emphasis on psychology and behavioural principle of market participants. E. Fama (1965) describes the efficient market as *"a market where there are large numbers of rational profit-maximizes actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants"*. Under this assumption there is no speculation in the markets, if everyone is rational. The only difference among the investors is the information that is available for them – there will be no trade if there will be no information, that is, the reason to trade. This causes the market values floating around the real or fundamental values.

The basic idea of the theory is that *"a capital market is said to be efficient if prices in the market fully reflect available information. When this condition is satisfied, market participants can not earn an economic profit on the basis of available information"* (Levich, 2001).

The rational market participants have impounded all known information and probabilities concerning uncertainty about the future into current prices. Therefore, market prices are generally right. Changes in prices are therefore due to the short-term realization of information. In the long term, these prices changes, or returns, reflect compensation for taking risk. According to Shiller (2008) the simplest version of EMH implies that the true value of the stock equals the present value of optimally discounted future dividends. So, we can see the price as a forecast of future dividends of the stock. Of course not all companies pay dividends, but theoretically they should be paying at some point, otherwise their shares would not have value – investors would not like to give any away money for share without receiving any return in the future. People are looking for future income and stock prices go up if there is information about future dividends or earnings. Following the EMH it could be said, according to Shiller, that for example if the Price to Earnings ratio of the stock is low, something negative is expected to happen to the company's earnings or dividends in the future. Therefore a low Price to Earnings ratio can be seen as a forecast of bad company results in the future.

According to Elton et al. (2003), the stock market crash of 1987 was one of the major events to raise doubts in EMH as it was totally not in line what with the theory states. The EMH postulates that there is no point in trying to seek profits higher then those of the market itself, because all the new information is already incorporated in the prices. Most analysts agree that the information that flow nowadays is much more efficient, than for example in 1929 when the Great Depression started, which implies that the market should be more efficient in the modern times and would not achieve such high volatility as in 1929. Indeed it would be naïve to think that it is possible to beat the market after getting information from weekly or even

daily newspaper when due to the technological advance the trading nowadays is performed in a matter of seconds. Nevertheless, the stock market crashes of 1929 as well as a recent one in 2008-2009 show that there are factors causing market inefficiency and it makes the market untrustworthy which is against the whole idea of EMH where the market participant should ideally stick to the market portfolio to optimize the returns.

The following section reviews the literature on market inefficiency to examine whether behavioural biases influence managerial and investor actions. We provide some evidence that the existence of the perfect market efficiency is not fully realistic to be proven in the economic world.

1.2. Market inefficiencies

Baruch Lev in his last book (Winning Investor Over, 2012) asks the following question: *Can stock price in large and active capital markets deviate from business fundamentals over sustained period?*. He wrote: *" no, say ardent believers in capital market efficiency"*. He pointed out that the capital market efficiency is a state in which securities price essentially reflect all publicly available valuation-relevant information (earnings, growth potential, competitive position) without systematic biases or pronounced investor sentiments (optimism and pessimism). Individual investors, may, of course, over- or underprice securities, such mispricing will be quickly identified and offset by sophisticated arbitrageurs in search of gains from investors' mistakes, thereby reverting prices to intrinsic values (Lev, 2012). Mispricing, goes the efficient markets doctrine, is an isolated, temporary phenomenon.

In this section we provide a review of the most important studies about the empirical evidence showing markets inefficiencies.

The contrarian investors in the long run see the low Price to Earnings, Price to Book Value, Price to Cash Earnings and other financial ratios as an

indication that the stock is undervalued and that in the future it will regain the true value or what is called their intrinsic, fundamental value. It is contradictory to classical view that assets are priced rationally in the market and that high price measures signal a persistent strong expected performance of such securities.

Market analysis related to contrarian investor can be traced back to Basu (1977) that investigated the performance of US stocks based on their Price to Earnings (P/E) ratio. He concludes that over the 14 years period of 1957-1971, the stocks with lower P/E ratio earn higher absolute and risk-adjusted rates of return than the stocks with higher P/E. Assuming that his model were correct such finding was one of the first indication about the inefficiency in the markets. The P/E information was not fully absorbed by the market, therefore creating disequilibrium and an opportunity to invest and gain an abnormal profit.

The US market analysis by Lakonishok (1994) incorporates more financial ratios of the past performance of securities. In addition to Earnings to Price (E/P), they use Book to Market (B/M), Cash Flow to Price (C/P), and Past Growth of Sales (GS) measures. Over the 22 years period 1968-1990, they find that stock value portfolios (the ones with higher E/P, B/M, C/P, and lower G/S) outperform the growth stock portfolios, which they also called *"glamour portfolios"*. Moreover, they do not find differences in fundament risk portfolios. Set aside the risk and the data snooping bias explanations, the authors conclude that the market participants make judgmental errors and overestimate the expectation on the returns of growth portfolio based on their good ratios of past performance. Lakonishok and Chan review their findings in 2004 and they come back to the same conclusions as in 1994. Chan et al. (1991), provides similar findings for the stock market in Japan as for the US and especially large value premium is observed for portfolios sorted by Price to Book Value Ratio – over 1% per month.

Fama and French (1992, 1993, 1995, 1996, 1998 and 2006) introduce some empirical contradictions to the classical Capital Assets Pricing Model (CAPM). They mention size effect, meaning that market capitalization

having an extra impact on returns together with β. Their findings contradict to the fact that over the period of 1963-1990 the average security returns are related to market fundamental risk β. In particular, Fama and French (1992) find evidence for both size and B/M effects-firms with low market capitalizations and high book equity value relative to market equity earns significantly higher return than that predicted by the CAPM. They conclude that the variation in market returns can be associated with the size factor, Earnings to Price, Book to Market and leverage ratios. Banz (1981) documented that small-capitalization firms listed on the New York Stock Exchange (NYSE) earned significantly higher return than those predicted by the CAPM.

Moreover, Fama and French (1998) examine 13 markets outside the US, specifically Europe, Asia and Australia and conclude that for the period 1975 to 1995, the value premium can be found in twelve of the thirteen markets and that the value premium for the global portfolio is more that 7% per year. Again they conclude that CAPM cannot explain the value premium and the authors argue that the value premium comes due to risk not picked up by the model. The conclusions are based on evidence that there is common variation in the earnings of distressed firms that is not explained by market earnings, and there is common variation the returns on distressed stocks that is not explained by the market return.

Several practitioners, such as Kellogg and Kellogg (1991), argue that managers of publicly traded firms manipulate reported earnings to increase the firm's stock price. The literature provides some evidences about that phenomenon. Rangan (1998) investigates the earnings management phenomenon and the performance of seasoned equity offerings. In particular, he investigates whether earnings management around the time of the offering can explain a portion of the poor performance. His findings provide evidence that earnings management around the offerings reliably predict subsequent stock returns for a sample of 230 seasoned equity offerings in the year 1987-1990. A one-standard-deviation increase in

earnings management during the year around the offering is associated with a decline in the market-adjusted returns in the following year of about 10%. Sloan (1996) finds that stock prices do not reflect the differential persistence of accruals and cash flows. Investor tend to overweight accruals relative to the cash flow when forming future expectations only to be systematically surprised when accruals (cash flows) turn out, in the future, to be less (more) persistent than expected. As a result, low-accruals firms earn positive abnormal returns in the future. Cooper, Gulen and Schiller (2008) find that assets growth rates are strong predictors of future abnormal returns even after controlling for book-market ratios, firm capitalization, lagged returns and accruals.

Other form of the violation of the EMH lies in investor reaction to the news events. Event studies show that market reactions are no longer as efficient as they seemed to be in the short run. Ball and Brown (1968) show that after firm announced their earnings, the cumulative abnormal returns (CARs) continue to drift up for "good news" firms and down for "bad news" firms, suggesting that the market does not react completely at the time of announcement earnings. In the same field, market inefficiency also includes investor reaction to other corporate news events. Ritter 1991 find that initial public offerings (IPOs) significantly underperform relative to a set of comparable firms matched on size and industry. By investing in a sample of IPOs, investors would have earned around 17% less than investors in matching firms.

Baker and Nofsinger (2010) after a wide review on the empirical studies testing market inefficiencies conclude, in their book, that *"for markets to be efficient, investors need to be rational. If they are not rational, their biases need to be uncorrelated. If their biases are uncorrelated, rational arbitrageurs need to be able to take large offsetting traders to restore the market to efficiency"*. They demonstrate that investor biases are systematic and predictable. Limits to arbitrageurs cannot take advantage of these biases and restore market efficiency.

In the next section we provide a review of the main framework of the behavioural finance theory as opposed to the traditional finance theory.

1.3. Behavioural Finance Theory

Although the traditional finance paradigm is appealing from a market-level perspective, it entails an unrealistic burden on human behaviour (Baker and Nofsinger, 2010). The behavioural finance ideas started emerging in the early 1990s opposing the Efficient Market Hypothesis with research based on the judgment and decision making process of the participants of the financial markets. Thaler (1993) called behavioural finance as *"simply open-minded finance"*. What makes behavioural finance theory different from the classical finance theory is that it is not only based on mathematical calculus, but it applies all other social sciences and psychology, sociology and anthropology, political science or, since recently, neuroscience. The main ideas of this discipline were inspired by the breakthrough studies by psychologist Kahneman and Tversky on human biased and cognitive errors, which later developed to what is called prospect theory. In his book, Shefrin (2000) describes how these early psychological papers influenced the field of finance.

The prospect theory is an alternative theory to the classical expected utility theory, describing the decision making process under risk. The expected utility theory, developed by Neumann and Morgenstern in the 1940s, states that while making a decision people look at the final states of wealth they can end up with. According to prospect theory, when the stakes are small relative to investor's wealth, investors do not think in term of wealth, they think in terms of what might be gained or lost. Moreover, people's attitude to gain and loss are different. The prospect theory suggests that people look at the change of wealth relative to some reference point, which may vary from situation to situation and display loss aversion (Sheifer, 2000). So, prospect theory implies the use of a reference point against which investors would code their gains and losses.

Following the rationale proved by numerous experiments of Kahneman and Tversky, people are willing to risk more than facing losses. In the stock market this can be seen when market participants do not sell stocks when stock prices are falling in order to avoid or postpone losses and otherwise try to sell the winning stocks too early, without exploiting them to the end (Tvede, 1999). This often leads the results that are not in line with the best interest of investors.

Another important finding coming from the prospect theory and many experiments by Tversky and Kahneman is that people are overconfident about their abilities. When the markets are booming and everyone is earning money, people tend to attribute these achievements to their own ability to choose a winning stock. Moreover, when individuals get confident they trade more then they should and lose huge amount due to costs. Odean and Barber (2000) find that individual households in the US which trade at the highest rate on average earn 6% less than the market portfolio and this underperformance can be explained by overconfidence. According to Shiller (2000) overconfidence is one of the main factors why high trading volumes can be observed in the markets.

Finally, as already said before, following the efficient market hypothesis the prices should reflect their fundamental value. This means that there are no discrepancies in the pricing of securities and therefore no chance to earn excess adjusted profits in the markets. Behavioural finance theory argues against it, stating that *there might be situations in the market where prices do not reflect their fundamental values and these are caused by the markets' participants which are driven by the investor sentiment and they are irrational.* The longstanding classical view is that the deviations from fundamental value are very quickly fixed by the rational traders in the market – whenever a deviation from fundamental value appears the rational traders spot the good opportunity to invest and quickly use this opportunity bringing the price back to its fundamentals or correcting the mispricing. The behavioural finance does not agree with the first part of this situation that the deviation from the fundamental price is always a good investment

opportunity (Barberis and Thaler, 2003). They argue *"even when an asset is wildly mispriced, strategies designed to correct the mispricing can be both risky and costly, rendering them unattractive. As a results, the mispricing can remain unchallenged"* (Barberis and Thaler, 2003).

Since behavioural finance has been developed several studies empirically demonstrated its prediction. In the next section we propose a review of the main studies analysing the cases in which the market prices do not reflect their fundamentals values. The investors' sentiment stream of literature is the main theoretical framework on this topic.

1.4. Investors' Sentiment

The market efficiency hypothesis states that securities prices always reflect available information. As already shown in the previous section, over the last decade that paradigm has come under attack. Shleifer (2000), Barberis and Thaler (2001), Hirshleifer (2001) summarize three related stands of literature. First, theoretical work argues that arbitrage has limited effectiveness. Second, experimental evidence shows that agents hold beliefs that are not completely correct and/or make choices that are normatively questionable. Finally, empirical work documents phenomena where prices almost certainly deviate from fundamental value. Researchers in behavioural finance have been working to augment the standard model with alternative model.

The first assumption of these models is that investor is subject to sentiment. Investor sentiment, defined broadly, is a belief about future cash flows and investment risks that is not justified by the facts at hand (Baker and Wurgler, 2006). The second assumption is that betting against sentimental investors is costly and risky.

A pioneering and well-known set of studies of sentiment and aggregate stock returns appeared in the 1980s. They were largely a-theoretical, testing in various ways whether the stock market as a whole could be mispriced (some recent empirical evidences of the stock market mispricing is going to
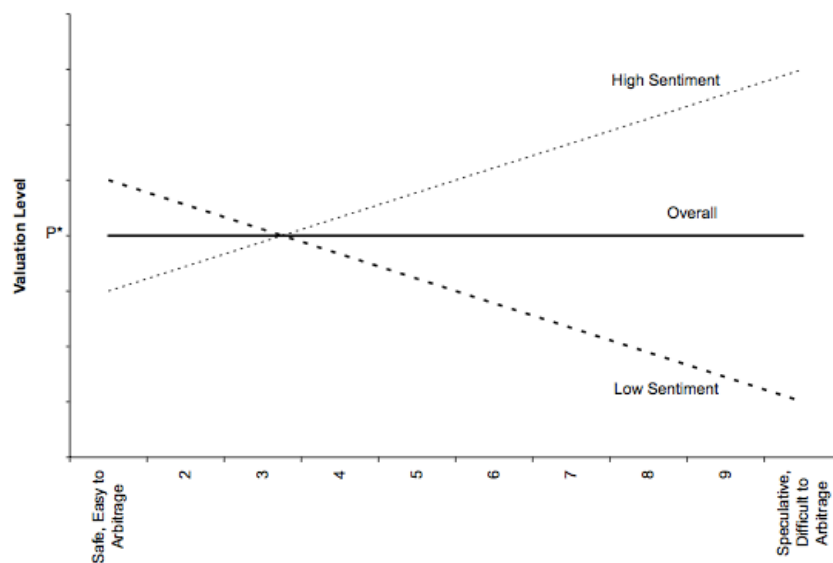
be shown in section 1.5). Authors looked for: the tendency of aggregate returns to mean revert; volatility in aggregate stock index return that could not be justified by volatility in fundamentals, which is in fact another way of characterising mean reversion in returns; or predictability of aggregate returns using simple valuation ratios like the ratio of aggregate dividends to stock market value. In all these studies, the role of sentiment was implicit, and the statistical evidence was not usually very strong. Even when statistical inferences seemed robust, the economic interpretation was still unclear (Baker and Wurgler, 2006). Predictability of stock returns could reflect the correction of sentiment-induced mispricing or, arguably, time-varying risk or risk aversion that causes time variation in expected returns. The more recent studies (such as Polk and Sapienza, 2002; Baker and Wurgler, 2003; Baker and Wurgler, 2006; Bergman and Roychwdhry, 2008; Billet et al., 2010), utilize interim advances in behavioural finance theory to provide sharper tests for the effect of sentiment. In particular, in the many behavioural models of securities markets inspired by De Long et al. (1990), investor are two types: rational arbitrageurs who are sentiment free and irrational traders prone to exogenous sentiment. They compete in the market and see the expected returns, but arbitrageurs are limited in various ways. These limits come from short horizons or costs and risk of trading of short selling. So, prices are not always at their fundamental values. In such models mispricing arises out of the combination of two factors: a change in sentiment of the part of the irrational traders, and a limit to arbitrage from the rational ones (Baker and Wurgler, 2006).

Polk and Sapienza (2002) empirically tested the real effect of investor sentiment. In their model, benevolent managers of overvalued companies invest in project with negative net present value and managers of undervalued companies forego projects with positive net present value. Empirically they found a positive relation between investment and a number of proxies for mispricing, controlling for investment opportunities and financial slack, suggesting that overpriced (underpriced) firms tend to overinvest (underinvest). In particular, in their model managers with private

information about the quality of the firm's investment may invest inefficiently on behalf of shareholders. The reason is that investment decision serve as a signal of firm's value and can be used to manipulate stock prices to shareholders' advantage. If firm are mispriced, inefficient investment can be predict with ex-ante variables. In their empirical part they show that variables, which predict negative stock returns, also predict investment, controlling for investment opportunities and financial slack. They show that a typical change in one of their "mispricing proxies" results in a roughly a two to four percent change in the firm's investment as a percentage of capital. Their model predicts that these sensitivities should be greater, the greater the degree of asymmetric information between firms and investors. They also found that investment is more sensitive to mispricing for firm with higher R&D intensity (suggesting longer period of information asymmetry) or share turnover (suggesting that the firm's shareholders are short-term investors). They documented the same patterns in the cross-section of average returns. Firms with relatively high (low) investment subsequently have relative low (high) stock return, after controlling for investment opportunities and other characteristics linked to return predictability (Polk and Sapienza, 2002).

Baker and Wurgler (2003) also examined how investor sentiment affects the cross-section of returns. They started from the theory that predicts that a broad wave of sentiment will disproportionally affect stocks whose valuation is highly subjective and are difficult to arbitrage. They tested this prediction by studying how the cross-section of subsequent stock returns varies with proxies for beginning-of-period investor sentiment. Specifically, when sentiment appears to be high, stocks that are likely to be relatively attractive to optimism and speculator and at the same time unattractive candidates for arbitrage – young stocks, small stocks, unprofitable stocks, non-dividend paying stocks, high-volatility stocks, extreme-growth stocks, and distressed stock – experienced low future return relative to other stocks. In case of low sentiment these cross-sectional patterns attenuate or reverse.

In a paper of 2006 the same authors (Baker and Wurgler) review the theoretical and empirical evidence to explain which stocks are likely to be most affected by sentiment. They, once again, empirically demonstrated that when sentiment is high, subsequent market returns are low. In particular, they show that it is quite possible to measure investor sentiment, and that waves of sentiment have clearly discernible, important and regular effects on individual firms and on the stock market as a whole. In particular, stocks that are difficult to arbitrage or to value are most affected by sentiment. They proposed the seesaw diagram (below) that summarizes their approach.

Source: Cross-sectional effects of investor sentiment – Baker and Wurgler, 2006.

Another interesting study related to investor sentiment and corporate disclosure has been proposed by Bergam and Roychowghhury (2008). They investigated how firms react strategically to investor sentiment via their disclosure policies in an attempt to influence the sentiment-induced biased in expectation. They hypothesize that when investor sentiment is high and expectation of future earnings are relatively more optimistic, managers will reduce voluntary disclosure and remain silent in the attempt to maintain these more optimistic valuations. In contrast, when consumer confidence is low and expectations are less optimistic, manager will increase voluntary disclosure to the market, attempting to adjust expectations upwards. They found that when sentiment is high, analyst earnings estimates, particularly

for the long horizon, tend to be more optimistic as compared to actual earning realizations. They demonstrated that during period of low sentiment, managers increase the frequency of long-horizon earnings forecasts which walk-up analyst consensus estimates. Thus, forecasting over longer horizons appears to be affected by managers' desire to maintain optimistic valuations. In contrast, over the short horizon, we find that during periods of high sentiment, firms increase the frequency of walk-down forecast, while during periods of low sentiment they increase the frequency of walk-up forecasts (Bergam and Roychowghhury 2008).

1.5. Stock market overvaluation and undervaluation

Previous studies provide evidence that there are a variety of reasons why a firm can be overvalued (firm's value higher than its fundamentals or underlying value, Jensen (2005)); yet the causes of overvaluation are difficult to pinpoint and identify empirically. Regardless of the exact causes of overvaluation, over time the price of overvalued equity will drop towards the underlying value. In the case of equity overvaluation, this price drop is inevitable because information about the firm's fundamentals will be revealed over time, and investors' opinion about valuation will converge toward the underlying value of the firm. However, a drop in equity price for any reason is rarely desirable to any manager who has a lot to gain when equity price increases. Recent empirical researches pointed out that managers' wealth and compensation increase with the stock price through stock performance-based incentives (Bergstresser and Philippon, 2006; Burns and Kedia, 2008) and, that manager's job security increases with the stock price. Weisbach (1988) suggests that a manager is less likely to lose his job when the stock is performing well. Moreover, a strong stock performance increases the manager's value in the executive labour market.

While prior finance and accounting research does not identify the exact causes of overvaluation, it provides evidence that overvalued firms are associated with pattern of high earnings growth expectations (Jensen, 2004);

a story of merger and acquisitions (Travols, 1987; Moeller, Schlingeman, and Stulz, 2004); and greater analyst dispersions, which can lead to mispricing and, in particular, overpricing due to the different opinions of firm value (Anderson, Ghysels and Juergens, 2005).

An interesting stream of research analyses the relationship between equity overvaluation and IPOs. The studies demonstrate that it is not uncommon that IPOs are systematically overvalued compared with their fundamentals (Moller et al., 2003; Shiah-HOU, 1997). Moller et al., (2003) provide evidence of the magnitude of the costs of the overvalued equity in the recent period. Their research findings showed that in the three-day period surrounding the announcement of acquisitions in the period 1998-2001, acquiring firms nearly lost a total of $240 billion compared to a total loss of $4.2 billion in all of the 1980s. Jensen in a paper published in 2004 in the European Financial Management explains the previous overvalued equities phenomenon as an agency costs.

In a following paper, Jensen (2005) provides a more deep explanation of the phenomenon pointing out that *"equity is overvalued when a firm's stock price is higher then its underlying value"*. By definition, an overvalued equity means the company will not be able to deliver, except by pure luck, the performance to justify its value (Jensen, 2005). Because of their access to superior information, managers of the company will probably understand this before most others stakeholders and, at this point, they begin to worry about whether they can really support this high price. At the same time analysts, typically, begin to pressure them to do something to justify this high price, and such pressure inevitably begin to push managers to take actions that will at least make it appear that they are delivering the performance to justify the price. When they do that, they are taking actions that actually destroy value in the long run but generate the appearance of improved performance in the short run (Jensen, 2004). To prolong the overvaluation, a manager can take several actions such as: overinvesting through acquisition or expansions, commitment financial frauds, or managing earnings.

The theoretical framework provides evidence also for the undervaluation phenomenon. Eberhart et al. (2004) show that the share of the companies with growing R&D (more than 5 percent annual growth in R&D-to-total assets) yield positive and significant risk-adjusted stock returns for up to five year following the R&D increase. The fact that these companies generate abnormal future stock returns – almost 20 percent in the first two years – implies that investors undervalued their shares when the R&D information was reported, and it took several years for the undervaluation to be corrected.

As said the aim of this study is to analyse the relationship between firm's market valuation and earnings management phenomenon. Thus, once introduced the shares mispricing topic with the related empirical studies, in the following section we introduce the earnings management phenomenon and, then we provide a review of the studies that have empirically tested the relationship between the agency costs of overvalued equity and earnings management. As we will explain in the hypothesis development section, once tested the Jensen's prediction about the shares' overpricing, the aim of this research is also to analyse firm's behaviour also in case of shares underpricing and its association with the earnings management.

2. Earnings management

2.1. Earnings management definition

The traditional view on the value of accounting information is that this has a dual role: informativeness and stewardship (Ronen, 1979; Antle and Demski, 1989; Natarajan, 1996, 2004; Rajan and Sarath, 1996; Sunder, 1997, 2002; Christensen and Demski, 2003; Feltham, Indjejikinan, and Nanda, 2006). The informativeness role arises from investor's demand for information to predict future cash flow and assesses their risk. A rich stream of literature illustrates this informativeness empirically through findings that associates earnings and stock prices. Francis, Schipper, and Vincent, 2003,

for example, found that reported earnings number are more closely associated with process than cash flows, sales, and other financial statements' data.

The stewardship role of accounting comes from the separation between ownership and management in public firms, which put their managers in a position of a steward to shareholders. Since managers act as self-interested individuals, goal congruence between the shareholders and managers is no longer assured. For shareholders, the remedy is to demand information to monitor the manger after he has acted and to provide him with incentives that align his interests with their own (Ronen, 2010). As Watts and Zimmerman (1978) state: *"one function of financial reporting is to constrain management to act in the shareholders' interest"*.

Once briefly introduced the dominant perspective on the role of accounting information we provide a literature review on the definitions of earnings management phenomenon. The academic literature on earnings management is well established and in order to provide a clear framework in which this work will be developed, we report the most useful definition of earnings management.

Ronen (2007) summarizes the different definitions of earnings management classifying them in three different areas: *white, grey* and *black*. Beneficial (*white*) earnings management enhances the transparency of reports and it is defined as *"earnings management is taking advantage of the flexibility in the choice of accounting treatment to signal the manger's private information on the future cash flows"*; the pernicious earnings management (*black*) involves outright misrepresentation and fraud and it is defined as *"earnings management is the practice of using tricks to misrepresent or reduce transparency of the financial reports"*; and, the *grey* earnings management that is manipulation of reports within the boundaries of compliance with bright-line standards and it is defined as *"earnings management is choosing an accounting treatment that is either opportunistic (maximizing the utility of management only) or economically*

efficient". This grey one definition will be the framework in which our research is developed.

Following Devidson et al. (1987) managing earnings is *"the process of taking deliberate steps within the constraints of generally accepted accounting principles to bring about a desired level of reported earnings"*.

Fields, Lys and Vincent, (2001) pointed out that earnings management occur when *"managers exercise their discretion over the accounting numbers with or without restrictions. Such discretion can be either firm value maximizing or opportunistic"*. According to Scott (2003), *"earnings management is the choice by a manager of accounting policies so as to achieve specific objective"*.

Ronen (2007) suggests that the definition in the literature that best describes earnings management seems to be the one provided by Healy and Whalen in 1999: *"earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depends on reported accounting numbers"*. In fact, this definition captures both the costly-contracting approach (earnings management is used to influence contracting outcomes), the informational approach (earnings management is used to mislead stakeholders) and it also captures the connotation of opportunistic manipulation.

As we already said, engaging in earnings management is not a risk free-operation. First of all, companies and CEOs risk damaging their reputations and, second, there are also litigation risks involved with managing earnings. Therefore, companies will only engage in earnings management when the benefits of this behaviour are higher then the risk and costs involved.

Previous research provides several categories of incentive that try to explain the reason of earnings management, such as: stock market incentives, signalling/concealing private information, political costs, CEOs compensation and reputation, companies internal reason and so on.

In order to better explain our theoretical framework, in the next section we provide a brief review on the studies that link earnings to the stock market prices and earnings management to the stock market incentives.

2.2. The relationship between earnings and stock market

The interaction between accounting numbers and stock markets reaction has been widely recognized by the academic environment.

Earnings provide information to investors. Some information is already known before the firm publicizes its results. In this case the announcement confirm the market's (and market maker's) beliefs. Some other information, instead, is a surprise. Once investors revise their beliefs about the firm's value, they adjust their investment decisions, which, in turn, affect the market price (Ronen, 2007). The street wisdom is that *"better earnings equal a higher stock price"* (Anderson and Thomas, Picking up the pieces, The Fall Refco Is Providing a Test for Wall Street, New York Times, October 15, 2005).

The accounting research supports the street wisdom by providing extensively empirical evidence of the positive link between earnings and the market price and between the market price and the future earnings. (Lev, 1989; Ball and Bartov, 1996; La Porta, Lakonishok, Shleifer, and Vishny, 1997; Choi, Lee, and Press, 2002; Kinney, Burgstahler and Martin, 2002).

2.3. The relation between earnings management and stock market incentives

As we already said, there are several possible motives for manipulating earnings but the spotlight has been on those incentives that are related to the stock market. Although the focus on listed companies seems logical and natural, we want to confirm once and again that the majority of the earnings management studies published in the journals that are under consideration, rely on US and UK data. The US economy is known for its widespread

ownership and its liquid and efficient stock markets (Cormier et al., 2000). In several other countries, like European countries, there are far less listed companies and privately owned companies set the tone. We have to consider that in those countries, there might be other important reasons for earnings management (such as tax avoidance) that haven't been under the attention of researchers quite as much. In those countries managers and CEOs might engage in earnings management for different reasons, through different forms, different models and also the relations with stock markets could indicate different results (Leuz, Nanda and Wisocki, 2003)

Based on the previous US researches, meeting or beating the analysts' forecast seems to be of enough importance for companies to engage earnings management. Several research papers are dedicated to find out why mangers try to meet or beat expectations as well as to finding evidence consistent with earnings management to rich this benchmark. Bartov et al. (2002) in their study provide evidence that meeting the analysts' expectations is important because firm that meet or beat expectation enjoy higher returns, even when it is likely that is achieved through earnings management or expectation management. Matsunaga and Park (2001), instead, documented that missing an earnings benchmark has negative implications for stock return as well as CEO compensation.

To be able to meet or beat the forecasts, managers turn to earnings management. Payne and Robb (2000) concluded that the more analysts agree, the stronger the incentive is to meet the consensus forecast. If pre-managed earnings are below the forecast, managers use income-increasing earnings management. If pre-managed earnings are higher then the forecast, manager can choose between income-decreasing earnings management (saving it for a bad day) or not managing the earnings, hoping for an increase in stock return.

In order to identify firms that might engage in earnings management to avoid negative earnings surprise, Matsumoto (2002) has tried to identify firm characteristics that are associated with this kind of behaviour. She found that firms with higher transient institutional ownership are more

likely to meet or beat expectations. These firms seems to use earnings management as well as expectations management to be able to meet the expectations.

To align shareholders' goal with managers' objectives and give less room to agency conflicts, CEO's and senior manager are typically compensated by equity incentives. The previously mentioned papers introduce evidence of earnings management to meet or beat expectations and to influence stock price. This kind of opportunistic behaviour might even increase when there is a direct link of these two incentives and the financial benefit of the firm's management. Benish and Vargus (2002), Park and Park (2004) Cheng and Warfiel (2005) documented earnings management's link with insider trading. With reference to this field, other studies documented the relationship between earnings management and stock compensation through stock options. For a deeply explanations see: Baker et al (2003), Bartov and Mohanram (2004), Kwon and Yin (2006).

As we can see from the previous review, there are lots of studies that have empirically demonstrated the link between earnings, earnings management, and stock market incentives. In section 3.1, instead, we report only the studies that empirically validated the Jensen's hypothesis on the link between agency costs of overvalued equity and earnings management. Before that, we provide a review of the theoretical model used by scholars to detect earnings management. We think this review should be useful for both the theoretical and the empirical section explanation.

2.4 Detecting Earnings Management

In this section we will describe the earnings management proxy typically used in the empirical analysis. Since earnings management is an inherently unobservable process, proxies are needed to make inferences.

Most of the researches have identified earnings management with the detection of discretionary accruals.

Accrual accounting is based on the notion that there is a difference between costs and expenditures versus benefits and revenues. In fact, *accruals arise when there is a discrepancy between the timing of cash flow and the timing of accounting recognition of the transaction* (Ronen, 2007). Due to this fact net income can be seen as the adjustment of the operational cash flow for transitory components resulting in net income from operation. These adjustment items are called accruals. <u>Earnings management literature, typically, refers to the intentional manipulation of accruals in order to maximize the managers' utility and/or the market value of the firm.</u>

In this section we chronologically provide a review about the seminal papers that have provided theoretical and empirical contributions to earnings management literature.

The first contribution to the earnings management literature in order to model normal accruals was done by Ronen and Sadan in 1981. They estimate the long-run earnings. Since firm must report, in total the true earnings, smoothing involves the timing of the recognition of the income-statement items. They estimated the trend of operating income through a two-stage procedure that involves the deviation of reported income from the long-run trend–abnormal income, also referred to as abnormal operating income. In their model, if the deviation of reported income from the long-run (they called S) is positive, the firm is likely to manage income downward, and vice versa.

Healy (1985) was the first to consider earnings management using what he termed *"discretionary accruals"*. These are the accruals that are under the discretion of management and they are considered as a proxy for earnings management behaviour. In his paper, he tests the bonus-maximizing hypothesis of managerial behaviour. Healy analyses the incentives of management to manage earnings downward when its managerial bonus is "out of the money". By using actual parameters and definitions of bonus

contracts in 94 sample firms, he find that accrual policies of managers are linked to the income reporting incentives of their bonus contracts, and that changes in accounting procedures by managers are linked to adoption or modification of their bonus plan. He proposes "discretionary" accruals as a proxy for earnings management behaviour. Healy defines DA (discretionary accruals) as follows:

$$DA = -DEP - X_2 D_1 + \Delta WORK - (TP + D_1) \times D_2$$

where:

DA	discretionary accruals, which are equated with total accruals (denoted by ACC);
DEP	depreciation;
X_2	extraordinary items;
D_1	dummy variable; D1=1 if bonus plan earnings are defined after (before) extraordinary items;
$\Delta WORK$	the change in select accruals from working capital: the increase in accounting receivable plus the increase in inventory plus the decrease in accounts payable;
ΔTP	the change in income tax payable;
D_2	dummy variable; D2=1 (0) if bonus plan earnings are defined after (before) income tax.

The problem related to this model is that components of accruals (discretionary and non-discretionary) are not observable so researcher has to make assumption about one of the components. Healy assumes that the discretionary accruals component is the level of accruals in a given year and he assumes that non-discretionary accruals are zero in expectation.

De Angelo (1986) conducts a study of 64 companies whose managers propose to go private by purchasing all of the publicly held common stock.

She uses discretionary accruals to test whether these managers systematically understate earnings in the period before the buyout. She uses as a proxy for discretionary accruals the change in total accruals. In the first (1986) study, DeAngelo does not detect earnings management, but in the 1988 study she is more successful. Her test results indicate that earnings increase during a contest by 1% of total assets, but accruals increase by about 2%, although the change in cash flow is close to zero. Hence, the evidence is more consistent with earnings management rather than improved performance in response to the pressure of the contest.

McNichols et al. (1988) examine whether manager manipulate earnings by focusing on a specific accruals, the provision for bad debt. They use Generally Accepted Accounting principle (GAAP) to formulate a model of the expected accrual in the absence of earnings management. The results show that the discretionary component of the provision for bad debt is income-decreasing for firms whose earnings are usually high or low. Even though their methodology is more powerful in detecting earnings management than the previous methodology using total accruals, the total accrual approach is typically preferred because is comprehensiveness.

Dechow and Sloan (1991) analyse the spending on research and development (R&D) during the last year of the tenure of an outgoing CEO. They formulate the following hypothesis: a reduction in expenditures on R&D activities is H1: more likely during the years immediately before a CEO departure; H2: less likely if the CEO's wealth is sensitive to the firm value, and H3: less likely if the turnover is peaceful. The first hypothesis arises from the fact that net income is a basis for the CEO's bonus. Hence, CEOs have incentives to increase earnings by reducing the R&D expenditure. The second hypothesis is based on the observation that a reduction in R&D reduce the firm's expected value, so the CEO's incentive to reduce R&D are weakened when he holds share of the firm. The third is based on the fact that when a departing CEO passes his authority to his

designated successor a few years before his retirement, by the time the CEO quits the post, he has no authority over these decisions (Vancil, 1987). Dechow and Sloan based their research design on the assumption that the variation in the determinants of non-discretionary accruals is common across all firms in the same industry. This industry model for normal non-discretionary accruals is:

$$NDA_{t+1} = \gamma_1 + \gamma_2 median(TA_{t+1})$$

where, the median (TA_{t+1}) is the median value of the total accruals, scaled by lagged assets for all non-sample firms in the same industry and year (Dechow, Sloan, and Sweeney, 1995, use the two-digit SIC code).

The advantage of this approach is that the researcher does not have to formulate a model of how the normal item under investigation (in this case, R&D) behaves. The test considers, instead, the difference in TA between a firm with incentive to manage earnings and its colleagues that lack these incentives (Ronen, 2007).

However, there are a couple of disadvantages: first, the model applies only to event study in which not all firms experience the same event. Second, even if not all firms in the industry have the same incentives to manage earnings, if other firms in the industry also manage earnings in the same direction, the test biases against finding earnings management, and if other firms manage earnings in the opposite direction, the test might indicate non-existent earnings management (Ronen, 2007).

Jones (1991) tests earnings management behaviour during import relief investigations by the U.S. International Trade Commission (ITC). She finds that discretionary accruals are more income-decreasing during the year the ITC completed this investigation than would otherwise be expected. She uses a regression-type model to estimate non-discretionary accruals in a given year based on the change in economic conditions. Specifically, she expects that working capital accruals are related to the change in sales and

that depreciation is related to the level of gross property, plant and equipment. The model use to estimate non-discretionary accruals is as following:

$$\frac{TAC_t}{A_{t-1}} = \alpha(\frac{1}{A_{t-1}}) + \beta_1(\frac{\Delta S_t}{A_{t-1}}) + \beta_2(\frac{PPE_t}{A_{t-1}}) + \varepsilon_t$$

where:

TAC_t total operating accruals in year t,

A_{t-1} total asset at the beginning of the year t,

ΔS_t change in sales from year t-1 to year t, and

PPE_t gross property, plant and equipment.

In the previous model all variables are divided by the beginning level of total assets to adjust for heteroskedasticity.

The discretionary accrual component is estimated as the difference between total accruals and the non-discretionary component using the coefficient from the previous regression:

$$DAC_t = \frac{TAC_t}{A_{t-1}} - (a*\frac{1}{A_{t-1}} - b*\frac{\Delta S_t}{A_{t-1}} - b_2\frac{PPE_t}{A_{t-1}})$$

where a, b_1, b_2 are the coefficient estimated in the previous regression and all the other variables are as previous defined.

Dechow et al. (1995) test several models estimating discretionary accruals including those discussed above in terms of their power (type II error) and specification (type I error)2. They introduced the modified Jones model in which the change in receivables is deducted from the change in sales in the

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[2] When omitted variable are correlated with PART or the liner model is misspecified, DA are measure with one of the two errors:
Type I error: an erroneous rejection of the null hypothesis that firm do not manage earnings.
Type II error: an erroneous acceptance of the null hypothesis that firm do not manage earnings.

estimation model (1.1) to eliminate the conjectured tendency of the Jones model to measure discretionary accruals with error when discretion is exercise over revenues. So, the novelty of the modified Jones model is the treatment of accounts receivable. If the firm does not manage earnings in the estimation period, the accruals of credit sales are normal in the estimation period and abnormal in the event period. The modified Jones model recognizes this difference in time-series analysis by making the following adjustment: the first stage of estimating normal accruals is similar to the Jones model; the second stage (the event period), normal accruals, NDA, are computed by multiplying the estimated coefficient of the change in sales by the change in cash sales (the change in revenues minus the change in account receivable) instead of the change in sales. The NDA of firm i in the event period p are computed as follows:

$$NDA_{ip} = \hat{\alpha}_1 \left[\frac{1}{A_{ip-1}} \right] + \hat{\beta}_{1i} \left[\left(\Delta REV_{ip} - \Delta AR_{ip} / A_{ip-1} \right) \right] + \hat{\beta}_{2i} \left[\frac{PPE_{ip}}{A_{ip-1}} \right]$$

where:

NDA_{ip} normal, non-discretionary accruals of firm I in period p;

A_{ip-1} lagged asset of firm i;

REV revenues;

AR account receivable;

PPE property, plant & equipments;

Δ change;

$\hat{\beta}_{1i}$ the coefficient of total revenues in the estimation period. It is estimated from the regression of accruals on ΔREV_i and PPE_i

The modified Jones model exhibits the most power in detecting earnings management.

The forward-looking model is given in Dechow, Richardson and Tuna (2003). This model includes three innovations: a separation of NDA (non-discretionary accruals) from the DA (discretionary accruals) in the credit sales, a control for lagged accruals, and a control for growth.

The first innovation treats some credit sales as non-discretionary in the event period as well. Dechow et al. (2003) regress the change in account receivable, ΔREC on the change in sales $\Delta Sales$ (both variables are deflated by lagged assets):

$$\Delta REC = a + k\Delta Sales + \varepsilon$$

where:

ΔREC the change in account receivable;

$\Delta Sales$ the change in sales;

k   the coefficient of the change in sales.

The parameter, k, measure the sensitivity of the change in non-discretionary account receivable to sales.

The second innovation is the addition of lagged accruals. Dechow at. Al (2003) reported that this innovation increase the adjusted R^2 to 17.2%.

The third innovation reflects the fact that some abnormal accruals arise from changes in business decision (Healy, 1996). If sales are expected to grow, inventory has to be built up to supply the forthcoming additional demand. This, in turn, increases current NDA. A failure to recognize the demand for higher level of inventory would lead to erroneously classifying NDA as DA. Hence, Dechow et al. (2003) control for growth in sales.

Previous literature has recognized that accruals are related to performance (McNichols and Wilson, 1988; Dechow, Sloan and Sweeney, 1995; Kaszinik, 1999). Performance affects the estimation of earnings management because NDA may be erroneously classified as DA when performance is abnormal and the relationship between accruals and performance is non-linear. In the following section we briefly detail the

improvement to the Jones model that deal with the effect of performance on DA.

Kang and Sivaramakrishnan (1995) put forward a model to detect earnings management using the balance of accruals rather then the more common change in accounts used in other paper. This study does not refine the Jones model and it contributes to the literature by pointing at neglected elements of the Jones model. They discuss accruals related to sales (account receivable), accruals related to expenses (inventories, other current assets, and other current liabilities), and accrual related to property, plant end equipment (depreciation). Their model relies on the instrumental variable approach and provides stronger results. The review, thus, far has allude to the fact that, the models used to estimate discretionary accruals for the purpose of testing for earnings management suffer from the existence of measurement error. This measurement error arises, as said before, because variables that explain non-discretionary accruals have been omitted from the expectation models and so wind up on the residual term, which represent discretionary accruals.

Given that the financial analysis literature advocates detecting earnings management by comparing the patterns of accruals and cash flows (e.g. Pelepu, Healy, and Bernard, 2003), cash flow seem a natural candidate for a performance control. (e.g. Dechow, Sloan and Sweeney, 1995; Rees, Gill and Gore, 1996; Jeter and Shivakumar, 1999; Zarowin, 2002; Park and Park, 2004; Coehn, Dey and Lys, 2005; Francis, LaFond , Olsson and Schipper, 2005; Myers, Myers and Skinner, 2006; Ye, 2006).

Since cash flows are defined as the difference between earnings before extraordinary items and accruals, including contemporaneous cash flows as a regressor may induce a simultaneously problem, especially if the research design uses the statement of cash-flows approach to calculate accruals. Thus, until Dechow and Dichev (2002), most studies did not control for this performance measure.

Dichow and Dichev (2002), focus on the quality of earnings. They make the argument that the quality of accruals depends on their mistake in predicting cash-flows, since accruals separate the timing of cash flow from their accounting recognition. They run the following firm-level, time series regression:

$$\Delta WC_t = b_0 + b_1 CF_{t-1} + b_2 CF_t + b_3 CF_{t+1} + \varepsilon_t$$

where:

ΔWC_t the change in working capital, measured as the sum of the change in account receivable + change in inventory minus the change in account payable minus the change in tax payable plus the change in other net assets net of liabilities, with all variable scaled by average assets;

CF_t cash flow from operations;

ε the error term that is used to measure the quality of earnings.

The residuals from this regression are used as the measure of the quality of earnings and accruals. Examining how a firm's characteristics affect the quality of earnings, they obtain three key findings: the quality of accruals decrease in total accruals, firm size, and the volatility of sales, cash flow and accruals; these results are explained by the increased chance of being wrong when accruals are high. The quality of accruals is decreasing in the length of the operating cycle, which is 360/(sales/average account receivable) + 360/(cost of good sold/average inventory). The intuition of this result is immediate to the extent that the quality of accruals is influenced by uncertainty: the longer the cycle, the greater the likelihood of making mistakes in the estimation and recognition of accruals. The greater the frequency with which the firm reports losses, the lower the quality of its accruals, since the error in accruals is correlated with stocks.

Kothari, Leone and Wasley (2005), developed a performance-matching model. Their motivation is to address the non-linear relationship between

normal accruals and performance. They offer two different approaches. The first involves matching similar firms, which alleviates the need to use an OLS estimate of DA. They detect earnings management by comparing the accruals of firms that are otherwise almost identical. The second, the linear-performance matching model, embodies two modification of the Jones and the modified Jones models: and intercept, and an additional control for the lagged rate of return on assets, ROA_{t-1}. They run the following regression:

$$\frac{N\hat{DA}_{ip}}{A_{ip-1}} = \alpha_0 + \hat{\alpha}_1 \left[\frac{1}{A_{ip-1}} \right] + \hat{\beta}_{1i} \left[\frac{\Delta REV_{ip} - \Delta AR_{ip}}{A_{ip-1}} \right] + \hat{\beta}_{2i} \left[\frac{PPE_{ip}}{A_{ip-1}} \right] + \delta ROA_{i,p-1}$$

where α_0 is a constant and $\delta ROA_{i,p-1}$ is the lagged rate of return on assets. Kothari et al. (2005) found that having an ROA in the regression reduces discretionary accruals when they expect the null hypothesis of no earnings management to hold. They observed that the standard error of the DAs increases with the lagged ROA.

3. The agency theory of overvalued equity and earnings management

An extremely interesting research field came out after the Jensen's paper 2005. As we already know, he wrote the first paper about agency costs with Meckling in 1976, where agency costs were defined as the costs associated with cooperative effort by human beings. They focused on the agency costs arising when one entity, the principal, hires another, the agent, to act for him or her. They define agency costs, in the original paper, as the sum of the contracting, monitoring and bounding costs undertaken to reduce costs due to the conflict of interest, plus the "residual loss" that occurs because it is generally impossible to perfectly identify the agents' interest with that of the principal. In that article they viewed markets as potent forces to help controlling agency costs (Jensen and Meckling, 1976).

In a paper published in 2005 Jensen pointed out how securities markets can, sometimes, create and exacerbate conflict of interest between managers and owners rather then solve them. He pointed out that this paper can be understood as expanding the range of costly conflict of interest that the Agency Model can handle, in particular market and managerial optimism and the forces that allow or even encourage markets to become enablers of value-destroying managerial behaviour.

The main focus of the Jensen's paper is that *"people are paid not for what they do, but for what they do relative some target"*. This perspective leads people to game the system by manipulating both the setting of the target and how they meet their targets. These counterproductive target-based budget and compensation systems provide the fertile foundation for the damaging effects of the earnings management game with the capital markets (Jensen, 2005). CEOs and CFOs know that the capital markets will punish the entire firm if they miss analysts' forecasts. As managers who meet or exceed their internal targets receive a bonus, the capital markets reward a firm with a premium for meeting or beating analysts' expectations.

Before Jensen's paper (2005), Skinner and Sloan (2002) demonstrated that when a firm produces earnings that beat the consensus of the analyst forecast for the quarter, the stock price raise on average by 5,5 percent more during the quarter than the returns on a size-matched portfolio. For negative earnings surprises the stock price falls on average by – 5,04 percent more during the quarter then the size-matched portfolio. Generally, the only way for manager to meet those expectations, year and year out, is cook their numbers to mask the inherent uncertainty in their business. When number are manipulated to tell the markets what they want to hear rather then the true status of the firm and, when the real operating decisions that would maximize value are compromised to meet market expectations, real long-term value is being destroyed (Jensen, 2005). Jensen theoretically pointed out that overvalued equity creates a setting in which some managers (agent) take actions to support the firm's short-term stock price, and those actions are costly to the current debt-holders and long-term stockholders (principal).

Under the agency theory of overvalued equity, managers of overvalued firms are likely to manage their firms' earnings to enhance the overvaluation.

Since 2005, several empirical studies have been done in order to demonstrate the validity of the Jensen's prediction. In the following section we provide a review of the researches analysing the relation between shares misevaluation and earnings management.

3.1 Empirical evidences supporting the Jensen's agency cost of overvalued equity and earnings management

The Jensen's predictions on the agency cost of the overvalued equity has opened a wide field of research that demonstrated the validity of his predictions, in particular focusing on the relation between overvalued companies and earnings management.

Kothari et al. (2006) provide empirical evidences that support the Jensen's argument. Their study is based on the assumption that agency theory of overvalued equity predicts that the overvalued firms are likely to engage in income-increasing earnings management in order to meet the unrealistic performance expectations incorporated in the stock prices. They expected that a sub-sample of firms with upward managed accruals will be more heavily populated with overvalued firms and the subsequent negative stock performance of such companies is a mere overvaluation reversal. Using a sample of US companies with data starting from 1963 to 2004, they formulate a number of testable predictions that allow them to distinguish between the agency theory of overvalued equity and the traditional investor fixation hypothesis as the driving force behind the accrual anomaly. Consistent with the agency theory of overvalued equity, they found an asymmetry in the relation between accruals and returns, accruals and insider-trading patterns, and accruals and corporate investment financing decisions. They found that companies in the highest income-increasing accrual decile experience an economically large abnormal price run-up prior

to the accrual management year, which is followed by stock underperformance in the subsequent years.

Chi and Gupta (2007) contributed to the same stream of literature empirically examining the significance of the agency costs of overvalued equity by focusing on earnings management. Their study is organised around the research question whether equity overvaluation leads to more income-increasing earnings management. Taking into consideration a sample of U.S. firm year observations from 1964 to 2003, earnings management measurement based on a modified version of the Jones (1991) model and, a measure of overvaluation as suggested by Rhodes-Kropf et al (RKRV, 2005), they found that overvaluation is significantly related to subsequent income-increasing earnings management (i.e. high discretionary accruals). The effect is large economically: a one-standard deviation increases in total valuation error a fifteen-per cent standard deviation increases in discretionary accruals. Consistent with the accruals anomaly literature, they found that higher discretionary accruals are associated with lower future abnormal stock return. Moreover, they demonstrated that this association becomes stronger as prior overvaluation intensifies. In fact, among the most overvalued firms, those with the higher discretionary accruals underperform those with the low discretionary accruals during the following year by 11,88% after adjusting for the Fama-French (1993) risk factors. They also found that higher discretionary accruals are associated with lower future operating performance, and also this association becomes stronger as prior overvaluation intensifies. Among the most overvalued-firms, those with high discretionary accruals underperform those with low discretionary accruals during the following year by 12,87% as measured by industry-adjusted unmanaged EBITDA-to-asset ratio.

The relation found by Chi and Gupta (2007) on the association between discretionary and lower future abnormal stock returns as well as between accruals and lower future operating performance, are robust once controlling for a host of firm attributes, governance and managerial incentive attributes.

As far as the theoretical contribution is concerned, previous results should be considered as a complement of Efendi et al.'s (2007). Efendi et al. provide evidence that CEO holdings in-the-money stock options engage significantly more in financial restatements. In particular, they investigated the incentives that led the rush of restated financial statements at the end of the 1990s market bubble, providing evidence on CEO opportunism during the 1990s in an effort to support overvalued stock price. Using a sample of 350 US companies that announced restatements between January 1, 2001 and June 30, 2002, they found that the likelihood of a misstated financial statement increases greatly when the CEO has very sizable holdings in – the-money stock options. They found also that misstatement are also more likely for firms that are constrained by the interest-coverage debt covenant, that raise new debt or equity capital, or that have a CEO who serves as a board chair. In summary, their results, based on a US sample, indicate that agency costs increased as substantially overvalued equity caused managers to take actions to support the stock price.

Always related to the agency theory of overvalued equity and earnings management issue, Bardertscher (2010) examines how the degree and duration of overvaluation affect management's choice of alternative earnings management mechanisms. Specifically, he examines the relation between overvalued equity and management's use of alternative within-GAAP earnings management mechanisms and subsequent non-GAAP earnings management. He started from the Jensen's prediction that manager are likely to engage in several types of earnings management practices in order to meet unrealistic performance expectations incorporate in the overvalued stock price. Badertscher (2010) termed these alternative earnings management choices Real Transaction Management (RTM), within-GAAP Accruals Management (AM), and non-GAAP earnings management. RTM refers to the purposeful altering of reported earnings in a particular direction by changing the timing or structuring of an operating, investing, or financing decision. Accruals management refers to the purposeful altering of accruals in a particular direction, either within-GAAP (i.e., AM) or

outside the boundaries of the GAAP (i.e., Non GAAP), achieved when managers adjust revenue or expense accrual to alter financial reports. In order to estimate overvalued equity, he employed the residual income model of Edwards and Bell (1961) and Ohlson (1961). Specifically, he predicts that the longer a firm is overvalued the more likely the firm will engage in within-GAAP earnings management. If at some point the overvalued firm is no longer able to engage in within-GAAP earnings management, he predicts that they will likely segue to non-GAAP earnings management in order to report the high performance demanded by the market year after year. Using a sample of US firms from 1994 to 2008, he pointed out that the longer a firm is overvalued the greater the amount of total within-GAAP earnings management exhibited by the firm. More interestingly, he found that overvalued firms initially engage in AM but at some point run out of AM choices and resort to the RTM. In other words, the results suggest that to sustain overvaluation, firm transaction from one type of earnings management to another rather than using only one type. He also found evidence that firms with sustained overvaluation are more likely to be restricted in their ability to engage in further AM, leading them to engage in more drastic and costly form of RTM.

Once within-GAAP earnings management options have been exhausted, his findings indicate that some firms resort to the most egregious form of earnings management, non-GAAP earnings management.

In summary, this study investigates how the degree and duration of firm overvaluation affect management's choice of alternative earnings management mechanism and, it sheds light on how one type of earnings management segues into another in order to sustain overvaluation, showing that the longer a firm is overvalued, the more likely the firm is to engage in a non-GAAP earnings management.

Marciukaityte and Varma (2007) estimate that firms that made earnings-decreasing restatements over the period 1990 to 2001 lost $72 billion around restatement announcements. Moreover, they found that forty-seven large-loss firms restating their earnings in the 1998 to 2001 period account

from $66 billion of these losses. They empirically demonstrated that despite very good stock performance and low book-to-market values before earnings misstatement, large-loss firms are associated with mean abnormal returns of -39% during the announcement period, and underperform matched firms by 44% during the first post-restatement year. Using a sample of 526 US companies that restated their earnings over the period 1990 to 2001, they empirically validated the role of agency costs of overvalued equity in earnings manipulation. The authors explained that their decision to use earnings restatements to validate the agency costs of overvalued equity hypothesis proposed by Jensen, is due to the assumption that restatements provide a more suitable sample to test the relationship with earnings management. Marciukaityte and Varma (2007) deem, and is a widespread belief also in the academic debate, that earnings restatement is the best way to measure earnings management because, by definition, is an admission by management that earnings were improperly reported.

A more recent paper by Houmes and Skantz (2010), using a sample that include all the firms in Compustat annual database from 1990 to 2005, provides evidence consistent with the overvaluation hypothesis. Their evidence suggests that high firm valuation and CEO equity at risk increase the likelihood of earnings management, and that the two incentives may complement one another. One implication for directors and audit committees that come from the Houmes et al. is that they should be particularly conscious of potential earnings manipulation when their firms has extremely high valuation multiples and when the CEO has a lot of equity at risk (Houmes and Skantz, 2010).

The previous section has provided a review of the researches that empirically demonstrated the relationship between shares mispricing and earnings management (measured using several proxies), validating the agency costs of overvalued equity proposed by Jensen in 2005. As we already said, one weakness of the researches presented in this section is that they are all developed using US companies, not providing evidence from other institutional contests. Our aim is to provide evidence that validate the

Jensen's hypothesis in other institutional contests, in particular, in insider system economy.

III. HYPOTHESIS DEVELOPMENT

As we said in the literature review, there is a wide field of empirical studies that figure out the relationship between overvalued equity and earnings management. Lakonishock et al. (1994) find that high market-to-book ratio, *"glamour stocks",* produces lower raw and size-adjusted returns than lower market-to-book firms. Anderson and Brooks (2006) show that P/E anomaly may be understated. They found a typical 6% differences in year-ahead returns between value and glamour firms based on the most recent P/E and, then, they show that the return differences double when using the prior eight year average of earnings and price to estimate P/E (price-to earnings ratio).

Previous studies, based on the US samples, provide evidence that firms with high abnormal returns underperform in the future periods. De Bondt and Thaler (1984) show that firms with prior three and five years high abnormal returns produce negative abnormal returns during the subsequent three and five years periods.

There are several evidence that, ex post, certain highly valued firms subsequently underperform the market does not suggest that managers accept the decline in share price as inevitable. To the contrary, managers of highly valued firms have considerable incentive to avoid reporting disappointment earnings and perpetuate the valuations, engaging in earnings management.

In order to validate the Jensen's predictions of the agency cost of overvalued equity and managers' incentive to perpetuate overvaluation engaging in earnings management, we examine the relationship between total accruals (used as proxy for earnings management) and market-to-book (used as proxy for firm's market valuation) using the change in total accruals from year t-1 to year t and the change in firm's market valuation from year t-1 to year t. The reasons behind this choice will be explained in section V.

To be more precise, accruals are measured relative to firms industry and represent the change in net operating assets that would be absent without discretionary earnings management. Thus, a firm with positive total accruals in t-1 and a positive change in total accruals in year t is increasing discretionary earnings by an increasing amount (income-increasing earnings management). Firm with negative total accruals in t-1 and negative change in total accruals in year t is decreasing discretionary earnings by decreasing amount (income-decreasing earnings management) (Houmes and Skantz, 20101).

Based on the previous theoretical framework (reported in section II), in order to test the managers' incentives to perpetuate overvaluation engaging in earnings management we propose the following hypothesis:

> *H1: ceteris paribus, an increasing in firm's market valuation is positively correlated to an increasing in total accruals.*

As said, to prolong the overvaluation, a manager can resort to overinvesting through acquisition or expansions, commitment frauds or managing earnings. Once tested the relation between the firm's market valuation and the use of total accruals (as proxy for earnings management), we go more in depth empirically analysing the direction of the accounting manipulation. Based on the previous theoretical framework, we expect that an increasing in firm's market valuation (overvaluation) induces managers to engage in income-increasing earnings management. That phenomenon, based on the empirical evidences obtained from the US contest, can be clearly attributed to the agency conflicts outlined by Jensen in 2005.

In fact, when a listed company is overvalued, according to the agency costs of overvalued equity presented by Jensen (2005), managers may have two choices: one is to report the profit lower than expected based on actual performance and the other is to overstate the profit of the company to temporarily satisfy market expectation. The research based on data of 42

years from 1963 to 2004 of listed companies in the USA conducted by Kothari et al. (2006) has shown that the accrual accounting and discretionary accruals in the next year of overvalued listed companies are higher than those undervalued listed companies. Moreover, Chi and Gupta (2007) provide evidence that overvaluation is significantly related to subsequent income-increasing earnings management. The effect is very strong: one-standard deviation increases in total valuation error a fifteen-per cent increase in discretionary accruals.

So, in order to analyse the manager's incentive to perpetuate the increasing in firm's market valuation, we expect that it will be a positive association between increasing in firm's market valuation and income-increasing earnings management (measured by the positive change from year t-1 to year t in total accruals). We propose the following hypothesis:

> H_{2a}: *ceteris paribus, income-increasing earnings management is positively correlated to an increasing in firm's market valuation.*

The previous hypothesis is also coherent with the findings of Badertscher (2010). As said before, he predicts that the longer a firm is overvalued the more likely the firm will engage in within-GAAP earnings management. If at some point the overvalued firms is no longer able to engage in within-GAAP earnings management, he predicts that managers will likely segue to non-GAAP earnings management in order to report the high performance demanded by the market year after year and, thus, perpetuating this *"game"* year after year they engage in accounting frauds (cases not considered in our research). Moreover, he found that overvalued firms initially engage in within-GAAP accruals management but a some point run out of accruals management choices and resort to the real transaction. In other words, he found evidence that firms with sustained overvaluation are more likely to be restricted in their ability to engage in further accruals management, leading them to engage in more costly form of real transaction.

Based on the Badertscher (2010) findings on the alternative earnings management mechanism, we also think that managers of overvalued companies might change accounting manipulation from income-increasing to income-decreasing earnings management in order to avoid extreme forms of upward earnings management.

Our intuition is that in case of decreasing in firm's market valuation manager's of previous years overvalued (increasing in firm's market valuation) companies may engage in income-decreasing earnings management in order to correct previous upward accrual accounting manipulation, avoiding to engage in the extreme forms of earnings management (non-GAAP earnings management) that induce accounting frauds.

Thus, we propose the following hypothesis:

> *H2b: ceteris paribus, income-decreasing earnings management is positively correlated to a decreasing in firm's market valuation.*

As we will see later in the results section, we examine the robustness of our predictions through several sensitivities' analysis. In particular, we test the previous hypotheses also considering the change in discretionary accruals (as proxy for earnings management) rather than the changes in total accruals. As we will explain later, this test allow us to clean our results from the potential effect of the sales growth that might has impact on the level of total accruals without any relation with the manager's discretional accruals accounting choices.

IV. THE ITALIAN INSIDER SYSTEM

1. The Italian institutional contest

There are several factors that are assumed to determine differences in accounting practices across European countries (Joos and Lang, 2004): legal environment, capital market, infrastructures and corporate governance characteristics.

The Italian industrial system is mainly characterized by a majority of small and medium-sized enterprises, most of them family-owned. As for other continental European countries, the main source of financing for the Italian business community is represented by bank lending an internal financing. Firms tend to establish close relationship with bank and, typically, are reluctant to go public. Compare to other large economies in the world, Italy has a relatively small equity market (La Porta et al., 1997; Pagano, Panetta, Zingales, 1998). The Milan Stock Exchange is the only public equity market in Italy[3]. Typically, firm whose shares are traded on the Milan Stock Exchange are former state-controlled entities or family-run firms, both characterized by highly concentrated ownership structure. Corporate control is often in the hands of founding families who have superior information relative to outside stakeholders. The asymmetric information between the insider and the banks are mainly resolved through informal channels, therefore there is a limited incentive to produce high quality public information. Disclosure, as a result, is seen as a legal/fiscal requirements more than useful tool (Zambon and Saccon, 1993) to inform outside stakeholders. As a consequence, minority shareholders are in an unfavourable position, also because legal enforcement and investor protection rules have been rather weak for several years (Zingales, 1994; Fiori, 2003; di Donato, 2005).

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[3] Until 1991, there were other minor stock exchanges in different Italian cities and also other informal markets called "mercati ristretti" (Pagano, Panetta and Zingales, 1998).

The Italian accounting system is regulated by the Civil Code (*Codice Civile*) that has been consistently revised over time to conform to the European Directives. The stated goal of the Italian local GAAP is the preservation of equity by accounting-based dividend pay-out rules and a close overlap of tax accounting rule with financial accounting rules.

Besides the Civil Code, the Italian accounting regulation encompasses a set of accounting standards (mainly aimed at interpreting and integrating the Civil Code) issued by the former Italian accounting body (*Consiglio Nazionale dei Dottori Commercialisti e dei Ragionieri*), that has now been substituted by the *Organismo Italiano di Contabilità* which is in charge of issuing accounting standards for entities that do not apply IFRS, and cooperating with international standard setting bodies. The Italian accounting system allows using international accounting standards if the national rules lack of guidance for a specific topic. Although Italy was, in theory, among one of the first European countries that allowed, in 1998, the use of internationally oriented accounting standards, in practice there has been no application of this rule until 2005, because the Ministry of Justice has never issued the effective decree, leaving the application of international oriented standards unclear for several years. This implies that early adopters of IFRS would have had to prepare group financial accounting information also according to local Italian GAAP. The resulting costs might explain the widespread reluctance of Italian listed companies to voluntary adopt IFRS prior to 2005. With the Legislative Decree n. 38/2005, application of IFRS become mandatory for listed firms' group accounts as of 2005.

In Italy, the enforcement of financial accounting is performed by the stock exchange regulator CONSOB (*Commissione Nazionale per le Società e la Borsa*). Concerning accounting rules enforcement, the CONSOB is entitles to monitor the release of information to the market by listed companies and to check general compliance with reporting standards.

In Italy, at the beginning of the 90s, the perception of the inefficiencies and problems were considered to be related mainly to insufficient investors' protection (see Bianchi et al, 2001; La Porta et al., 1997, 1998;

Associazione Preite, 1997). Prompted party by a wide debate and by an international literature that suggested that in Italy investor protection was poor and partly by a large privatization program, between 1990 and 2005 an extensive season of reforms has been developed. A new banking law was passed (1993), institutional investors' role increased in financial markets, the stock market was privatized, a securities law was enacted (1998), a corporate governance code was introduced (and then twice revised), a new company law has been enacted (2004); and the "law on savings" (2005) has further strengthened shareholders' protection (see Barucci (2006); Enriques and Volpini (2007)). All these changes – which upgrade the Italian institutional framework in terms of international standards – have deeply affected the governance structure of the Italian companies, at least according to a recent stand of literature that argue (and show empirically) that *"differences in legal investor protection across countries shape the ability of insider to expropriate outsiders, and thus determine <u>investor confidence in markets and consequently their development</u>"* (Djankov, 2005).

2. Earnings management in Italy

As we already said a wide literature framework and empirical evidence on earnings management comes from researches using samples of US listed companies, few studies are directed toward Europe and a little less are developed in Italy. In this section we provide brief review of the researches about earnings management in the Italian institutional contest, trying, on one hand, to underline the more meaningful results and, on the other hand, to show that no one study has been don with reference to firm's market valuation and earnings management.

A recent paper by Prencipe, Bar-Yosef (2009), using a sample of Italian listed companies analysed the relation between board independence and earnings management in family controlled firms. According to previous studies, their assumption is that board independence limits earnings management in typical widely held companies. The purpose of the Prencipe

et al. was to shed light on the question of whether board independence constraints earnings manipulation when the company is controlled by a family. The empirical evidence tent to support the hypothesis that, in family-controlled companies, the percentage of independent members of the board of directors (a commonly used proxy for board independence) has a weaker effect on earnings management than in non-family controlled companies. Moreover, they tested that CEO non-duality is also less effective in reducing earnings management, in particular when the CEO is a member of the controlling family. They conclude that the presence of the family, with strong long-term commitment to the company and its influence in the appointment of both top executive and board members, tends to lower board member substantial independence and to reduce board effectiveness in limiting the extent of earnings management. To achieve previous results, the authors composed a sample of non-financial companies listed on the Milan Stock Exchange and they used Abnormal Working Capital Accruals (DeFond and Park, 2001) as a proxy to measure earnings management.

Always in the corporate governance and accounting research field, Quagli, Avallone and Ramassa, 2006, tried to determine the association between the granting employee stock option plan and the adoption of earnings management practices. In particular, the analysis makes a preliminary contribution to asses whether recognition required by IFRS 2 will imply a future reduction in the granting stock option as incentive means. The basic assumption of the research is that accounting reasons – no recognition for the equity-settled share base payments (ESBPs) in profit and loss statement by the pre-IAS/IFRS normative scenario - may have been a relevant incentive in adopting this form of compensation. If this assumption is true, they presumed that the influence of IFRS 2 will be relevant in the future, since IFRS eliminates the accounting convenience for this form of compensation. To test this assumption they have formulated an hypothesis prediction that companies adopting ESBPs are characterized by a positive income-increasing earnings management in comparison to companies with no ESBPs. Then, they propose a second hypothesis, stating that the firms'

effect of this accounting standard would consist in a reduction of the number of listed firms granting new ESBPs in 2004. Results induce to refuse this hypothesis. Italian listed companies adopting ESBPs seem not characterised by a significant difference in income-increasing earnings management in comparison with companies with no ESBPs. Accordingly, no significant change occurs with regard to the adoption of ESBPs in 2004 taking into consideration both the number of companies issue new plan and the number of plan issued. In brief, the ESBP recognition in the profit and loss account introduced by IFRS 2 does not seem to change the attitude of Italian listed companies toward the issue of stock option plans and stock grants. To achieve previous results, Quagli et al. (2006) adopted as a proxy for earnings management that involves the common methodology to estimate unexpected accruals, as provide by Jones model (1991).

Concerning to the Italian audit market, Cameran, Prencipe and Trombetta (2007) tested the effect of auditor tenure and audit change on earnings quality in a unique mandatory audit firm rotation environment. Using a sample of Italian listed companies from 1985 to 2004 they demonstrated the relationship between audit quality, measured in term of earnings management[4], and audit tenure. As a proxy for earnings quality they used two types of accruals: Abnormal Working Capital Accruals and Current Accruals as suggest by DeFond and Park 2001. Their results show that the raw measures of accruals are negatively related to audit tenure. They found an inverse relationship between accruals and audit tenure confirmed by positive accruals, but not significant for absolute accruals and negative accruals. Hence, they provide evidence that, in their sample, income-increasing earnings management practices are more likely in the initial part of an audit-client relationship. They also examined the effect of voluntary audit change versus those resulting from mandatory auditor changes. These

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[4] According to the majority of the earnings management studies in he Italian contest, they use DeFond and Park model as a proxy for earnings management. The main idea behind the use of accruals as a measure of the audit quality is that high-quality audits should mitigate extreme management report decision.

results suggest that, in mandatory rotation setting, a voluntary change of the auditor tends to improve audit quality while a mandatory change tend to hamper audit quality. Overall, their findings do not support claims that there are beneficial effects of mandatory audit rotation on audit quality, as suggest lately by various US institutions.

Another interesting paper by Markarian et al. (2007) examines the relationship between the choice of R&D cost accounting and earnings management incentives. They hypothesized that the decision to capitalize R&D costs is related to firm's change in profitability. Their results indicate that firm that have a lower return on assets (compared to the average of the previous two years) are more likely to capitalize R&D expenditures, while firms that have improved performance are more likely to expense, consistent with the earnings-smoothing hypothesis. They also hypothesized that a firm's level of debt financing is related to capitalizing decisions. They do not find support for this prediction and, they suggest that this result is probably due to the fact that financial institutions tend to adjust reported earnings by eliminating the effect of any cost capitalization in order to limit the risk of misleading manipulation.

As we can easily understand from the previous literature, several studies have been done in order to understand the magnitude and the possible causes of earnings management phenomenon in Italy. However, the stream of research is not so well establish and several important arguments have been completely neglected, such as the relationship between stock market value and earnings management.

V. SAMPLE, DATA AND VARIABLES' DESCRIPTION

1. Sample description and data gathering

The sample for our tests includes all the Italian non-financial listed companies on the Milan Stock Exchange (MSE). A sample of 209 companies was selected covering a period from 1997 to 2010.

We excluded financial intermediaries, insurance companies and public utilities, because of the relevant differences in regulation and corporate governance systems and, above all, to avoid problems associated with estimating accruals for various types of regulated and financial services companies. Thus, all regulated firms and financial institutions are omitted from the study.

Firm's market valuation, earnings management measures and firm-level variables are computed using accounting and financial data provide by Datastream Database that offers access to historical financial content. We computed a panel data analysis composed by 209 Italian listed companies for the 1997 to 2010 period, in which the sample size changes based on the hypothesis that we want to test. All the regression models used in this study are controlled for the industry-year effect.

Attachment 1 provides the list of the companies that compose our sample divided by industry. Datastream classifies each company by industry, and a sector is any group of stocks with the same industrial classification.

Table 1 provides only sample size by industry.

Table 1 - Sample size by industry	
Industry classification	Number of companies
Automobile&Parts	11
Chemical	3
Construction&Material	17
Electricity	9
Electronic&Electrical Equip.	12
Food	10
Gas, Water & Multiutilities	9
General Industrial	4
General Retail	5
Healthcare Equip.	5
Household Good	11
Industrial Engeneering	13
Industrial Transportation	11
Leisure Good	4
Media	18
Mobile Telecomunication	2
Oil&Gas Produces	5
Personal Good	16
Pharma&Bio	2
Real Estate Inv.	9
Softwar&Computer Services	10
Support Services	7
Technology &Hardware	8
Unclassified	8
Total	209

2. Variables' description

In the following section we provide a description of all the variables used in our regression analysis, including the variables used for the robustness checks.

2.1. Dependent variable: Change in Current Accruals and Change in Discretionary Accruals.

A fundamental element of any test for earnings management is a measure of management's discretion over earnings. Earning management is an activity found in almost any major corporations, through which a manager may increase or decrease the level of accounting accruals (such as account receivable, inventory, account payable, deferred revenue, accrued liabilities and pre-paid expenses) in order to reach the desired profit.

The literature in the earnings management field has followed several approaches (modelling specific accruals, examine the statistical properties of earnings to identify behaviour that influence earnings, etc…etc) but the largest one is the attempt to identify discretionary accruals based on the relation between total accruals and hypothesized explanatory factors. This

literature began with Haley (1985) and De Angelo (1986), that, as explained in the detecting earnings management section 2.4, used total accruals and change in total accruals, respectively, as measure of management's discretion over earnings.

Thus, following the literature and the previous empirical studies we run our analysis considering total accruals as dependent variable.

In order to estimate the level of total accruals we compute the following formula:

$$TA_{ijt} = (NI_{ijt} - CFO_{ijt}) / Assets_{ijt}$$

where:

TA_{ijt} represents the total accruals for firm i at year t:

NI_{ijt} represents net income for firm i at year t. In particular, it represents income before extraordinary items and preferred and common dividends, but after operating and non-operating income and expense, reserves, income taxes, minority interests and equity in earnings (Datastream Datatype WC01551).

CFO_{ijt} represents the cash flow from operating activities for firm i year t. In particular, it represents the net cash receipts and disbursements resulting from the operation of the company (Datastream Datatype WC04860).

$Assets_{ijt}$ represents total assets for firm i at year t. In particular, it represents the sum of current total assets, long-term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets (Datastream Datatype WC02999).

j represents the industry.

In particular, we examine all hypotheses using change in total accruals. The change measure (total accrual in year t minus total accrual in year t-1) is a particularly strong test of our hypotheses. To be more precise, accruals are measured relative to a firm's industry and represent the change in net

operating assets that would be absent without discretionary earnings management. Thus, from an income statement point of view, a firm with positive total accruals in t-1 and a positive change in total accruals in year t is increasing discretionary earnings by an increasing amount (income-increasing earnings management). At the same time, firm with negative total accruals in t-1 and negative change in total accruals in year t is decreasing discretionary earnings by a decreasing amount (income-decreasing earning management).

Using the change in total accruals (TA) as a dependent variable is akin to the test of the hypothesis that an increasing in firm's market valuation strives to achieve or sustain earnings momentum through an increase in accruals. Thus, we used the change in total accruals from year t-1 to year t as the dependent variable of our regressions model and, we compute the following formula:

$$change\_TA_{ijt} = \frac{(TA_{ijt} - TA_{ijt-1})}{Assets_{ijt}}$$

where: TA_{ijt} is the total accruals for the firm i at year t; TA_{ijt-1} is the total accruals for firm i at year t-1 and $Assets_{ijt}$ is the amount of the total assets for firm i at time t.

As already explained, the aim of our study is to empirically analyse the relationship between firm's market valuation and earnings management. As said before we use the change in total accruals from year t to year t-1 as a proxy for earnings management. However, one of the possible reasons of an increasing in total accruals should be an increasing in operation activities. In particular, in case of sales growth we can record a higher level of total accruals, without any relation with the discretionary accounting choice by the manager. At the same time, also the relation with the market-to-book could be better due to the sales growth.

Thus, in order to avoid the potential effect of the sales growth and, to make our results robust we run several robustness checks. In fact, we regress our hypotheses considering the change in discretionary accruals as estimated by Jones model (1991) as dependent variable. Using Jones model we avoid the effect the sales growth for both dependent and independent variable. Thus, the discretionary accruals component (abnormal accruals) is estimated as the difference between total accruals and non-discretionary accruals using the residual estimation of the error term of the regression. As we know from the literature, the residual coefficient of the following OLS regression can be used as proxy for discretionary accruals:

$$\frac{CA_{ijt}}{Assets_{ijt-1}} = \beta_{1jt}\left(\frac{1}{Assets_{ijt-1}}\right) + \beta_{2jt}\left(\frac{\Delta SALES_{ijt}}{Assets_{ijt-1}}\right) + \varepsilon_{ijt}$$

where:

CA_{ijt} represents the current accruals. They are equal to $NI_{ijt} + dep_{ijt} - (CFO_{ijt})$; where NI_{ijt} is the net income for firm i at year t and represents income before extraordinary items (Datastream Datatype WC01551); dep_{ijt} is the depreciation and amortization for fir i at year t (Datastream Datatype WC01151) and CFO_{ijt} is the cash flow from operating activities for firm i at year t (Datastream Datatype WC04860).

$Assets_{ijt}$ represents total assets for firm i at year t (WC02999).

$\Delta SALES_{ijt}$ represents the change in sales for firm i from t-1 to t. In particular, sales are computed considering gross sales and other operating revenues less discounts, returns and allowances (Datastream Datatype WC01001).

The residual estimation from the previous equation is used as proxy for discretionary current accruals ($disCA_{ijt}$) for each firm-year observation. Then, using the same rational used for the total accruals, we test all the hypotheses considering the change in discretionary accruals from year t-1 to year t for each firm-year observation. Thus, firm with positive discretionary accruals in t-1 and a positive change in discretionary accruals in year t is increasing discretionary earnings by an increasing amount (income-increasing earnings management). At the same time, firm with negative discretionary accruals in t-1 and negative change in discretionary accruals in year t is decreasing discretionary earnings by a decreasing amount (income-decreasing earnings management). We compute the following formula as dependent variable for the robustness checks:

$$change\_disCA_{ijt} = \frac{disCA_{ijt} - disCA_{ijt-1}}{Assets_{ijt}}$$

where:

$change\_disCA_{ijt}$ represents the change in abnormal accruals (as computed through Jones model) for firm i from year t-1 to t.

$disCA_{ijt}$ represents the abnormal accruals for firm i at year t.

$disCA_{ijt-1}$ represents the abnormal accruals for firm i at year t-1

$Assets_{ijt}$ represents the total assets for firm i at year t

j represents the industry.

As we can see in the results section we compute our regressions first of all considering the entire sample (Panel A) and, then, splitting the sample between positive (Panel B) and negative (Panel C) change in total accruals and positive and negative change in discretionary accruals. The sub-sample of only positive (total and discretionary accruals) and only negative (total

and discretionary accruals) allow us to detect the trend of the two possible effects of accounting policies income-increasing (aggressive) and income-decreasing (conservative) earnings management and their relationship with the firm's market valuation.

2.2. Independent variable: Change in Market to Book Ratio

There is now considerable evidence that cross-sectional pattern of stock return can be explained by characteristics such as size, leverage, past returns, dividend-yield, earnings-to-price ratio and book-to-market ratio[5]. Fama and French examine all these variables (1992, 1996) simultaneously and conclude that, with the exception of the momentum strategy described by Jegadeesh and Titman (1993), the cross-sectional variation in expected returns can be explained by only two of these characteristics, size and book-to-market.

Similarly, Lakonishock, Shleifer and Vishny (1994) find that high market-to-book "*glamor stock*" produce lower raw and size-adjusted returns than lower market-to-book firms. In particular, they suggest that the high returns associated with high market-to-book (or value) stocks are generated by investors who incorrectly extrapolate the past earnings growth rate of firms. They suggest that investors are overly optimistic about firms that have done well in the past and they are overly pessimistic about those that have done poorly. They also suggest that low book-to-market (or growth) stocks are more "*glamorous*" than value stock and may thus attract naive investors who push up prices and lower the expected return of these securities.

Finance and accounting literature provide several methods to measure firms' market valuation.

The most common is a methodology developed by Rhodhes-Kropf, Robinson and Viswanathan (2005, hereafter RKRV). The authors decomposed the market-to-book equity ratio into components, one related to

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[5] The size anomalies was documented by Banz (1981) and Keim (1983), leverage by Bhanadari (1988), the past return effect by DeBondt (1983), the book-to-market effect byh Stattman (1980) and Rosenberg, Reid, and Lastein (1985).

misevaluation and the other one related to growth options. In other words, this method produces a measure of misevaluation controlling for systematic differences in growth options among firms and industries. The decomposition proposed by RKRV has also been used in recent studies such has Hertzel and Li (2007) and Ma, Whidbee, and Zhang (2008).

Based on this approach, a firm's log market-to-book equity ratio (M/B) can be decomposed into two items:

$$\ln(M/B) = \ln(M/V) + \ln(V/B)$$

where: M is the observed market value of equity and B is the book value of equity. V stands for the intrinsic value of equity, which is unobservable. Previous studies, for example Lee, Myers and Swaminathan (1999), Ang and Cheng (2006), and Dong, Hershleifer, Richardson, and Teoh (2006), use a residual income model from the accounting literature to estimate V. However, the residual income model relies on a number of fairly restrictive assumptions, and, more importantly, the use of analyst forecasts (to compute residual income) could be bias (Lin, 2009).

RKRV (2005) relax the residual income model and assume that a firm's intrinsic value is a linear function of its book value equity, net income (i.e., the growth of book value of equity), and leverage. The parameters of the linear function are allowed to vary over time and across industries to reflect the variation of investment opportunities across times and industries. The parameters can also capture differences in discount rates among firms. Specifically,

$$\ln(M_{it}) = \alpha_{0jt} + \alpha_{1jt}\ln(B_{it}) + \alpha_{2jt}\ln(|NI_{it}|) + \alpha_{3jt}I_{<0}\ln(|NI_{it}|) + \alpha_{4jt}LEV_{it} + \varepsilon_{it}$$

$|NI_{it}|$ stands for the absolute value of net income of firm I at time t. $I_{<0}$ is an indicator variable which equals one for negative net income and zero otherwise. LEV is the market leverage ratio. ε_{it} captures the deviation of intrinsic value of equity and, therefore, is a natural proxy for misevaluation.

Lin (2009) in his paper on the acquisition driven by stock overvaluation used the industry classification scheme developed by Fama and French (1997) to classified firms into 12 industries. They found similar results to RKRV (2005). These three variables, i.e. book value of equity, net income and leverage ratio are able to explain the within-industry cross-sectional variations of the market value with regression R2 over 80% for almost all industries.

Following the previous framework and the empirical studies measuring firm's market value we adopt market-to-book ratio as a proxy for the firm's market valuation.

We create a M/B portfolio considering the yearly market-to-book of each firms-industry observation. We compute the market-to-book (M/B) as the fiscal year-end share price divided by the fiscal year-end book value (Datastream Datatype PTBV).

Then, in order to estimate increasing and decreasing in firm's market value we create a portfolio considering the change in M/B from year t-1 to year t for each firm-year observation. In order to define our primary independent variable as a proxy for increasing and decreasing in firm's market value, we compute the following formula:

$$change\_M/B_{ijt} = \frac{M_{ijt} - M_{ijt-1}}{B_{ijt-1}}$$

where :

M_{ijt} represents the market value of firm i at year t;

M_{ijt-1} represents the market value of firm i at year t-1;

B_{ijt-1} represents the book value of firm i at year t-1;

j represents the industry.

Lagged rankings are used to form portfolio because increasing and/or decreasing in firm's market valuation is hypothesized to precede the incentive to manage earnings to meet or maintain earnings expectations.

2.3. Control Variables

Our regression models also include factors that prior research has identified as impacting on earnings management, and in particular on variability in total accruals (and discretionary accruals for the robustness checks). Each control variable is discussed in the following section.

o Firm size. Lang and Lundholm (1993) suggest that since larger companies are subject to greater scrutiny they are relatively more reluctant to manage earnings. Dechow and Dichev (2002) show that larger companies have better accrual quality when estimated as the residual from a model that regress current accruals onto current, lagged, and forward operating cash flows. Conversely, Cheng and Warfield (2005), Kadan and Yang (2005) pointed out that earnings management increase with big companies because size also brings political conflicts that could be mitigated by the achievement of better performances. To control for the controversial effects of firms' size, we use the natural log of a firm' s fiscal year-end total assets ($\ln Assets_{ijt}$).

o Leverage. Given the debt instruments may include restrictive covenants that are tied to earnings and other financial metrics, managers of firms with level of debt may be motivated to mange earnings upward. Higher profits help to respect loan covenants (Cheng and Warfield, 2005). As a firm' s debt ratio increases, managers have an incentive to engage in earnings management (Watts and Zimmerman, 1986). Accruals have been found to be positively associated with debt levels (Press and Weintrop, 1990), and discretionary accruals are higher for firms near debt covenant violations (DeFond and Jimbalvo, 1994). However, there is also reason to expect that firm with more leverage will be bound contractually to apply accounting in a more conservative fashion (Watts, 2003a and 2003b). This could imply a sort of "unconditional" or news-independent conservatism (Ryan, 2006) that would generally reduce the incidence of positive discretionary

accruals. Pae (2007) provide evidence that firm with higher leverage exhibit more conservative accounting through discretionary accruals, and Astami and Tower (2006) find companies choosing income-increasing accounting policies have less financial leverage. To control for the potential effect of debt level on accruals, we control for the variable LEV defined as a firm's total liabilities divided by total assets, both measured at the end of fiscal year (LEV_{ijt})

o Company' s performance. Kadan and Yang (2005) have shown that companies with poor performances in the previous year engage in earnings management practices to improve future results. Firms that are unable to meet last year's earnings level may have the incentive to use discretionary accruals in an attempt to avoid earnings disappointments. To control for the possible effect of firm performance on earnings management practices, we include firm's return on asset of prior year ROA. *laggedROA* is defined as income before extraordinary item divided by beginning of year assets ($laggedROA_{ijt-1}$).

VI. MODEL SPECIFICATION AND DESCRIPTIVE STATISTICS

1. Model Specification

In order to test the relationship between firm's market valuation and total accruals (H1) we use a panel data methodology considering 209 companies with observations from 1997 to 2010.

Our dependent variable for the primary test is the change in total accruals from year t-1 to year t ($change\_TA_{ijt}$).

We construct a firms' portfolio considering as a proxy for the firms' market valuation the change in market-to-book ratio. Our main independent variable is the ratio between the change in market value form year t-1 to year t and the book value at year t-1. In particular, we create a lagging portfolio of the fiscal year-end share prices divided by the fiscal year-end book value.

Then, as already explained in the variables' description section, we consider several other control variables ($\ln Assets$; LEV; ROA).

The following regression models, including also control variables, allow us to statistically test the relationship between changes in total accruals and change in market-to-book.

$$change\_TA_{ijt} = \beta_0 + \beta_1 change\_M/B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

Then, in order to test the relationship (H2a) between increasing in firm's valuation and positive change in total accruals (meaning income-increasing earnings management) we create a portfolio of firms considering only those with positive change in total accruals from year t-1 to year t. We run the following regression model:

$$+change\_TA_{ijt} = \beta_0 + \beta_1 change\_M/B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

Finally, in order to test the relationship (H2b) between decreasing in firm's market valuation and negative change in total accruals (meaning income-decreasing earnings management) we create a portfolio of firms considering

only those with negative change in total accruals from year t-1 to year t. We run the following regression model:

$$-change\_TA_{ijt} = \beta_0 + \beta_1 change\_M/B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

2. Descriptive statistics

Table 2 provides descriptive statistics for all the variables used in the primary regression tests, involving also the control variables.

Panel A (representing the total sample) shows the descriptive statistics for the portfolio based on change in total accruals (*change_TA*) from year t-1 to year t. We provide mean, median, standard deviation, min and max, and number of observations for each variables included in the statistical test. As we can see from the table the median value of the change in firm's market valuation (*change_M/B*) from year t-1 to year t is equal to -.03301.

Panel B is composed by firms' observation characterised by positive change in total accruals (+*change_TA*) from year t-1 to year t, representing the income-increasing earnings management portfolio. As we see from the table the median value for the variable change in firm's market value from year t-1 to year t (*change_M/B*) is equal to .00864.

Panel C is composed by firms' observation characterised by negative change in total accruals (-*change_TA*) from year t-1 to year t, representing income-decreasing earnings management portfolio. The median value for the variable change in firm's market value from year t-1 to year t (*change_M/B*) is equal to -.14299.

As we explained before, through Panel A we study the relation between firm's market valuation and the earnings management phenomenon (total accruals used as earnings management proxy).

Instead, Panel B and Panel C are created in order to study the relation between firm's market valuation and the direction of the accounting manipulation. They represent respectively the income-increasing earnings management (Panel B) and income-decreasing earnings management (Panel C).

The comparison among the descriptive statistics of the two panels provides a first cut of the interesting results that we will show in the primary tests section. As we see the median value of the variable change in firm's market valuation in Panel B (that represent income-increasing accounting manipulation) is higher than the value of the variable change in firm's market valuation in Panel C (that represent income-decreasing accounting manipulation). The value of the variable is respectively .00864 and -.14299. This means that in case of yearly positive change in total accruals the median value of the firm's market valuation is higher than in case of yearly negative change in total accruals. The analysis on the mean value provides same results.

Table 2: Descriptive statistics

Panel A: Descriptive statistics - Change in Total Accruals

	Mean	Median	Std Dev	Min	Max	N
change_TA	.0007226	-.0006586	.0916977	-.2229756	.2723369	1962
change_M/B	-.0607715	-.033001	1,101836	-3,651605	3,139022	1863
lnAssets	12,93197	12,70004	1,854104	9,5828	17,71038	2360
laggedROA	.0170198	.0206792	0.578115	-.1838076	.1398961	2423
LEV	.6161668	.6343437	.1843551	.1886658	.9624596	2446

Panel B: Descriptive statistics - Income-Increasing Sample

	Mean	Median	Std Dev	Min	Max	N
+change_TA	.0668223	.0433318	.0684015	0	.2723369	977
change_M/B	.0091244	.0086432	1,096997	-3,651605	3,139022	1007
lnAssets	12,8639	12,6692	1,842749	9,5828	17,71038	1416
laggedROA	.0122518	.0185406	.0615381	-.1838076	.1398961	1442
LEV	.6213807	.6394265	.0615381	.1886658	.9624596	1461

Panel C: Descriptive statistics - Income-Decreasing Sample

	Mean	Median	Std Dev	Min	Max	N
-change_TA	-.0648403	-.0461278	.0589529	-.2229756	-.0006169	985
change_M/B	-.093187	-.1429971	1,10248	-3,651605	3,139022	856
lnAssets	12,74134	13,03409	1,867334	9,5828	17,71038	944
laggedROA	.0231972	.0240284	.0510779	-.1838076	.1398961	981
LEV	.6084332	.6217086	.1821944	.1886658	.9624596	985

Notes:

This table presents descriptive statistics. The sample period is from 1997 to 2010. Panel A represents the change in total accruals portfolio. Panel B represents the income-increasing earnings management portfolio and Panel C represents the income-decreasing earnings management portfolio. For each of the three panels we provide mean, median, standard deviation (Std Dev), minimum (Min), maximum (Max) and number of observations (N) for each variable.

Table 3 provides Pearson' correlation matrix for each panel composition.

Panel A provides the Pearson's correlation coefficient for all the variables in our regression model for the sample of 1582 firm-year observations pooled over 1997 to 2010.

As we see from the Panel A the Pearson correlation between change in total accruals (*change_TA*) and change in firm's market value (*change_M/B*) is positive and significant (coefficient equals to .1351***).

Panel B provides the Pearson's correlation coefficient for all the variables in the panel representing income-increasing earnings management portfolio. The the sample is composed by 766 firm-year observations pooled over 1997 to 2010. Also in Panel B the Pearson's correlation between yearly positive change in total accruals (+*change_TA*) and firm's market value (*change_M/B*) is positive and significant (coefficient: .0703**).

Panel C provides the Pearson's correlation coefficient for all the variables in the income-decreasing earnings management portfolio. The sample is composed by 816 firm-year observations pooled over 1997 to 2010. The Pearson's correlation between yearly negative change in total accruals *(-change_TA*) and firm's market value (*change_M/B*) is positive and significant (coefficient equals to .1924***).

Table 3: Correlations' matrix

Panel A: Correlation Matrix - Change in Total Accruals

	Variables	1	2	3	4	5
1	change_TA	1				
2	change_M/B	.1351***	1			
3	lnA	-.02114	.0546**	1		
4	ROA	.1266***	.02570***	-.0072	1	
5	LEV	-.0066	-.0484	.0921***	-.3034***	1

Panel B: Correlation Matrix - Income-Increasing earnings management (positive change in total accruals)

	Variables	1	2	3	4	5
1	+change_TA	1				
2	change_M/B	.0703**	1			
3	lnA	-.2191***	.0282	1		
4	ROA	-.2617***	.1340***	.0011	1	
5	LEV	.0396	.0693**	.0895***	-.2431***	1

Panel C: Correlation Matrix - Income-Decreasing earnings management (negative change in total accruals)

	Variables	1	2	3	4	5
1	-change_TA	1				
2	change_M/B	.1924***	1			
3	lnA	.2190***	.0844**	1		
4	ROA	.0562*	.0861**	-.0177	1	
5	LEV	-.0662**	-.0254	.0998***	-.3726***	1

Notes:

This table presents the Pearson's correlation coefficient. The sample period is from 1997 to 2010. Panel A represents the change in total accruals portfolio. Panel B represents the income-increasing earnings management portfolio and, Panel C represents the income-decreasing earnings management portfolio.

VII. RESULTS

1. Primary test – Changes in Total Accruals as a Dependent Variable

All regression models are fixed effect models controlling for the industry-year effect. Fixed effect model relaxes the assumption that the regression function is constant over time and space (Baum, 2006).

In order to test the relation between firm's market valuation and earnings management we use different model specifications.

We found that the *change_M/B* coefficient is positive and significant in all specifications, suggesting a positive relation between the increasing (decreasing) firm's market valuation from year t-1 to year t and increasing (decreasing) in earnings management (measured through total accruals), which is consistent with our expectation that managers handling overvalued (undervalued) companies have strong incentive to sustain overvaluation (undervaluation). In order to do that, and to avoid earnings surprise to the market, they manipulate accounting figures increasing (decreasing) the use of accruals accounting.

Table 4 provides regression results for H1, H2a and H2b considering a period under observation from 1997 to 2010.

Through Model 1 we tested the relationship between changes in total accruals from year t-1 to year t and change in market-to-book from year t-1 to year t. The coefficient of the variable *change_M/B* is positive and significant (two-tailed p-value <0.01) supporting the hypothesis that the increasing in firm's market valuation is associated to an increasing in total accruals.

This result is consistent to Jensen (2005). Following Jensen 2005, when a listed company is overvalued, managers may have two choices: one is to report the profit lower than expected based on actual performance and, the other is to overstate the profit of the company to temporarily satisfy market expectation. Through Model 1 we support the prediction that when managers see an increasing in the firm's market value of the company from

year t-1 to year t they have the incentive to perpetuate the positive market valuation engaging in accounting manipulation.

This result is also coherent with the empirical evidence on the earnings momentum provide by Myers at al. (2006). They provide evidence on firms that report long "string of consecutive increases in earnings per share (EPS)". They show that these firms consistently enjoy abnormally strong stock market performance over the period during which they report earnings strings, and that this performance is stronger for firms which report consistent increases in annual EPS, and the negative market reaction associated with the end of this string is more adverse for firms that have reported longer strings. They argue that these regularities provide managers with strong incentive to maintain and extend the earnings strings, and in extreme cases, this may lead to accounting frauds. They also pointed out that this phenomenon is likely to be attributable to earnings management, and provide evidence that managers of these firms exercise their financial reporting discretion to sustain and extend their firms' earnings strings.

Through Model 1 we provide quite similar evidence. In fact, the positive and significant relation between change in total accruals and change in market-to-book ratio means that managers with positive market valuation for at least two subsequent years use total accruals to sustain their firm's valuation.

The coefficients of the control variables have the expected sign and are consistent with findings in previous studies. As indicated by the negative and significant coefficient on *laggedROA* (two-tailed p-value <0.01) companies with poor performance in the previous year engage in earnings management practices in the subsequent year to improve future results. Consistent with the previous empirical studies we regress ROA at year t-1 with the change in total accruals from t-1 to t. The negative sign of the coefficient shows that firms unable to meet last year's earnings level may have incentive to use accruals to avoid earnings disappointments (Kadan and Yang (2005). At the same way, consistent with Astami and Tower (2006) our result confirms a negative and statistically significant relation

between financial leverage and earnings management (two-tailed p-value <0.01). Following Watts (2003a and 2003b) this result is consistent with the prediction that firm with more leverage will be bound contractually to apply accounting in more conservative way. So, from our result it seems that firms with high leverage exhibit more conservative accounting.

Our tests are design to document evidence of both income-increasing and income-decreasing earnings management.

As already explained in the model definition section, through Model 2 and Model 3 we split the sample between positive and negative change in total accruals. Through this design we have the opportunity to test the direction of earning manipulation and its relation with the market-to- book ratio.

In particular, through hypothesis 2a and 2b we want to test the statistical significant relation between increasing firm's market valuation (as a proxy for stock market overvaluation) and income-increasing earnings management (measured through positive change in total accruals) and, decreasing in firm's market valuation (as a proxy for stock market undervaluation) and income-decreasing earnings management.

Model 2 supports H2a. In Model 2 we change the dependent variable and, we run a regression considering Panel B, representing income-increasing earnings management portfolio (firm-year observations with positive change in total accruals, *+change_TA*). The coefficient of the variables *change_M/B* is still positive and significant (two-tailed p-value<0.01) supporting the hypothesis that an increasing in firm's market value (overvaluation) induces managers to engage in income-increasing earnings management to sustain the overvaluation. Our results are coherent with previous empirical studies. First of all, they are coherent with Sloan 1996 research in accounting accruals. He investigates the market price of total accruals and he finds that the market fails to appreciate the lower persistence of the accrual component of earnings and, consequently, overprices total accruals. Using quarterly data, Collins and Hirbar (2000) also find that the market overprices total accruals.

Moreover, this result is coherent also with Chi and Gupta (2007) that, using a sample composed by US listed companies, provide evidence that overvaluation is significantly related to subsequent income-increasing earnings management.

Last but not least, the result is again coherent with the Jensen 2005 prediction of "the agency costs of the overvalued equity". If firms report market premium (positive market valuation for consequently years), their manager will be in a difficult situation once they realize that the market premium is not sustainable and, thus, they engage in increasingly aggressive accounting to match unrealistic expectations about their firm's valuation.

With reference to the control variables, the negative and significant coefficient of *laggedROA* confirms the prediction that companies with poor performance in the previous year engage in earnings management the following year, in particular in income-increasing earnings management to reach better results. In Model 2, instead, we obtain not significant result for the financial leverage (LEV) variable.

Model 3 supports H2b. In Model 3 we change again the dependent variable and, we run a regression considering Panel C, representing income-decreasing earnings management portfolio (firm-year observations with negative change in total accruals, *-change_TA*).

The coefficient of the variable *change_M/B* is positive and significant (two-tailed p-value<0.01) meaning that a decreasing in firm's market valuation (decreasing of the market-to-book value from t-1 to t) is related to income-decreasing earnings management (negative change in total accruals fro t-1 to t). The result provides evidence that in case of firm's undervaluation managers have incentive to sustain this decreasing engaging in income-decreasing earnings management.

In our opinion, this result could be related to the Badertscher (2010) findings on the overvaluation and choice of alternative earnings management mechanism. As said before he demonstrates the duration of

firm overvaluation is an important determinant of management' s choice of alternative earnings management mechanism.

Our empirical analysis suggests that in case of decreasing in firm's market valuation managers of previous year overvalued (increasing in firm's market valuation) companies engage in income-decreasing earnings management in order to correct previous upward accrual accounting manipulation, avoiding to engage in the extreme case of earnings management (non-GAAP earnings management) that induce accounting frauds.

This result seems to be consistent to Lev (2012) predictions about mispricing and earnings restatement. Lev (2012) in his last book ranked companies within a large number of industries by their mean three-year Price to Earnings ratio (P/E) – an indicator of share overvaluation - in the early 2000s. Then, he classified the companies in each industry to five-equal size groups of ascending P/E size. Finally, he recorded for each P/E group the frequency of subsequent earnings restatement - an indicator of earnings manipulation or other accounting improprieties. From his analysis it is evident that the frequency of restatement increase monotonically with share valuation. So, the higher is the P/E groups the higher is the probability of earnings restatement (as a proxy of earnings manipulation). His result shows, at the same time, that the lower P/E group – likely undervalued share – also has a high frequency of earnings restatement. He argues "*apparently, in their zeal to prop up lagging share prices, some managers of undervalued companies help themselves to accounting trickery*" (Lev, 2012).

Our result seem to be quite similar, showing that decreasing in firm's market valuation is also associate with earning management, in particular, with income-decreasing earnings management demonstrating that managers of undervalue companies may sustain the undervaluation to help themselves through accounting manipulation to correct accounting trickery.

Attachment 2 provides the list of the firm-year observations that compose Panel B and Panel C.

To control for the controversial effects of the firms' size we use the natural log of firm' s fiscal end-year assets. For all models presented above the variable is not statistically significant.

Table 4 - Primary Tests regressions' results °	year under observation from 1997 to 2010		
	Model 1	Model 2	Model 3
dependent variables	change_TA	+change_TA	-change_TA
Incercept	.08585*	.11942***	-.06454*
	(.04406)	(.04282)	(.03726)
change_M/B	.00995***	.00683***	.00562***
	(.00218)	(.00222)	(.00187)
lnAssets	-.00218	-.00397	.00245
	(.00324)	(.00315)	(.00271)
laggedROA	-.52008***	-.25243***	-.11013**
	(.05286)	(.05030)	(.05425)
LEV	-.08243***	-.00540	-.02544**
	(.02581)	(.02653)	(.02160)
F	30.96***	9.07***	4.39***
R2	.053	.13	.047
N	1582	766	816
Industry-year fixed effect	yes	yes	yes

Notes:
Two-tailed p-value denoted by asteriks are: ***less than 1%; *+ less than 5%; * less than 10%; all other variables are insignificant with p-value grather than 10%.

This table repots the results of our test of H1, H2a and H2b.
For H1 we use Model 1 and we run the following regression:

$$change\_TA_{ijt} = \beta_0 + \beta_1 change\_M / B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

For H2a we use Model 2 and we run the following regression:

$$+change\_TA_{ijt} = \beta_0 + \beta_1 change\_M / B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

For H2b we use Model 3 and we run the following regression:

$$-change\_TA_{ijt} = \beta_0 + \beta_1 change\_M / B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

° all the variables are winsorized at the 2% level

2. Robustness checks

We conduct the following sensitivity tests to examine the robustness of the results: alternative sample composition, additional dependent variables, and alternative model specification.

2.1. Alternative sample composition

To provide support for the interpretation of the results for *change_M/B* as consistent with the increasing in firm's market valuation hypothesis, Table 5 provides results considering different sample composition from Table 4.

As we already said the primary results have been run considering 1582 observations from 1997 to 2010, which is a very long time series. In order to check if the phenomenon could be influenced by different time series and, thus, it may have different behaviour considering different time period, we split our sample into two sub-samples.

The first one is the "*up-to-date sub-sample*" composed by firm-year observations from 2005 to 2010. Model 4, 5, and 6 in Table 5 provide results for this sub-sample. The second one is the "*old sub-sample*" composed by firm-year observations from 1997 to 2004. Model 7, 8 and 9 in Table 5 provide results for this second sub-sample.

Running this analysis we have the opportunity to check if the relation between firms' market valuation and earnings management is changed during the year and if we obtain alternative results from the primary one only considering different time series.

Looking at Table 5 we see that the primary findings (showed in the previous section) are robust to these alternative sample composition.

In Model 4 the positive and significant coefficient of the variable *change_M/B* (two-tailed p-value <0.01) shows that hypothesis 1 is supported for the period 2005-2010, meaning that also for the period 2005-2010 an increase in firm's market value is relate to an increase in total accruals.

The same model also confirms the results for the *laggedROA*. The coefficient is still negative and significant (two-tailed p-value <0.01) meaning that companies with poor performance in the previous year manipulate accruals accounting to get better results in the following year.

Model 5 and Model 6 support respectively hypothesis 2a and 2b. They provide results, considering a time series from 2005 to 2010, for the predictions about the relation between firm's market value and the earnings management direction (income-increasing and income-decreasing earnings management). In particular, Model 5 confirms that in case of increasing in firm's market-to-book from year t-1 to year t mangers has strong incentive to engage in income-increasing earnings management; in case of undervaluation (decreasing in firm's market-to-book from year t-1 to year t) mangers have incentive to engage in income-decreasing earnings management.

As we can see from Table 5 also the prediction on the *laggedROA* is robust for different time series.

Going back to old time series, analysing the results provided by Table 5 (year under observation from 1997 to 2004) we see that the primary results are still robust. For Model 7, 8 and 9 the coefficient of the variable *change_M/B* is positive and statistically significant in all the specifications (two-tailed p-value <0.01 for Model 7; two-tailed p-value <0.1 for Model 8; two-tailed p-value <0.01 for Model 9).

The results showed in Table 5 suggest that the predictions on the relation between firm's market value and earnings management are not driven by different time period under analysis.

Moreover, as said before in 2005 many companies in the EU were required to issue their financial statement based on the International Financial Reporting Standards (IFRS). Then, since 2005 many companies in EU and in Italy change their accounting practices.

The present robustness analysis confirming the results for both the period pre and post IFRS introduction in Europe, and thus in Italy, makes our predictions robust for this possible caveat. In fact, splitting the sample

between pre and post 2005 allow us to verify that the relation between firm's market value and earnings management is not driven by different time series and by changes in accounting policies due to the IFRS introduction.

Table 5- Alternative sample composition regressions' results

	year under observation from 2005 to 2010			year under observation from 1997 to 2004		
	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
dependent variables	change_TA	+change_TA	-change_TA	change_TA	+change_TA	-change_TA
Incercept	-.01701	.07212	-.06677	.1585**	.22158**	.4506
	(.14416)	(.10558)	(.10549)	(.08840)	(.08663)	(.07192)
change_M/B	.00666***	.00462*	.00455**	.01278***	.00843*	.01308***
	(.00264)	(.00263)	(.00226)	(.00459)	(.00480)	(.00380)
lnAssets	.07725	-.00123	.00430	-.00719	-.00461	-.00434
	(.01091)	(.00799)	(.00804)	(.00609)	(.00609)	(.004806)
laggedROA	-.69162***	-.3664***	-.21453***	-.39694**	.00904	-.38499***
	(.06751)	(.0595)	(.06637)	(.17728)	(.18808)	(.14343)
LEV	-.11164***	.01013	-.06865	-.10599	-.16430***	-.07765
	(.03856)	(.03425)	(.03039)	(.06642)	(.06272)	(.05642)
F	29.48***	10.97***	4.51***	3.69***	3.13***	4.65***
R2	.061	.182	.036	.011	.036	.008
N	999	551	559	472	215	257
Industry-year fixed effect	yes	yes	yes	yes	yes	yes

Notes:
Two-tailed p-value denoted by asteriks are: ***less than 1%; *+ less than 5%; * less than 10%; all other variables are insignificant with p-value grather than 10%.

2.2. Additional dependent variable – Changes in Discretionary Accruals

The aim of the present study is to empirically demonstrate the relationship between firm's market valuation (over-or undervaluation) and earnings management. As already explained and verified through the primary test we find a positive and statistically significant relation between change in firm's market valuation from year t-1 to year t and the change in total accruals from year t-1 to year t. These results support the prediction that managers handling overvalued companies have strong incentives to support the overvaluation (or the increasing of the firm's market value) engaging in earnings management.

However, one of the possible reasons of an increasing in firm's total accruals should be an increasing in operations activities, without any relation with the managerial discretion in the accounting choices. In this

case, also the market-to-book ratio should be higher due to the sales growth. So, in order to examine the robustness of the primary results we consider the changes in discretionary accruals as a dependent variable (as estimated through Jones model (1991)). Using Jones model (1991) we control for the possible effect of the sales growth (McNichols, 2000). The discretionary accruals component is estimated as the difference between total accruals and non-discretionary accruals and, as explained in the variables' description section, the estimation of the residuals (estimated for each firms-year observation) from Jones model is used as a proxy for discretionary accruals (measuring the level of accounting manipulation).

The coefficient of the variable change in sales from t-1 to t (ΔSALES/Assets; two-tailed p-value <0.01) is positive and statistically significant. This result allows us to control the level of total accruals for the sales growth. Thus, estimating the residuals of the regression from the Jones model 1991, we clean the analysis from the sales growth, making the primary results even more robust.

Then, to check the robustness of our findings considering the discretionary accruals rather than the total accruals, we run the following regressions' equation:

Equation's check on hypothesis 1:

$$change\_TA_{ijt} = \beta_0 + \beta_1 change\_M/B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

Equation's check on hypothesis 2a:

$$+change\_TA_{ijt} = \beta_0 + \beta_1 change\_M/B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

Equation's check on hypothesis 2b:

$$-change\_TA_{ijt} = \beta_0 + \beta_1 change\_M/B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

Table 6 reports the results for Model 1, 2 and 3 using change in discretionary accruals (*change_disCA*) as dependent variable, while, we run the same independent variable used for the primary tests (*change_M/B*).

Results for change in discretionary accruals from year t-1 to year t are strongly supportive of primary findings. In Model 1 changes in discretionary accruals are positively related to changes in firm's market valuation (two-tailed p-value <0.01). The results provided by Model 1 strongly support our primary test on hypothesis 1.

Model 1 also supports the result that we obtain in the primary test with reference to the control variables (*laggedROA* and *LEV* variables).

As far as concern hypotheses 2a and 2b, Model 2 and 3 respectively support the results of the primary test. In fact, analysing the earnings management direction, using positive and negative change in discretionary accruals as proxy for income-increasing and income-decreasing earnings management, we get positive and statistically significant coefficient on the variable *change_M/B*. The results confirm that companies characterised by an increasing in the firm's market value from year t-1 to year t engage in income-increasing earnings management (measured through positive change in discretionary accruals from year t-1 to year t as dependent variable).

Model 3 provides results supporting H2b. The positive and statistically significant coefficient of the variable *change_M/B* makes the hypothesis robust. Companies characterised by a decreasing in firm's market value engage in income-decreasing earnings management (measured through negative change in discretionary accruals from year t-1 to year t as dependent variable).

Table 6 - Changes in Discretionary Accruals regressions' results

year under observation from 1997 to 2010

	Model 1	Model 2	Model 3
dependent variables	*change_disCA*	*+change_disCA*	*-change_disCA*
Intercept	.03914	.08756**	-.04941
	(.04442)	(.03728)	(.03836)
change_M/B	.00487***	.00371**	.00460**
	(.00200)	(.00181)	(.00184)
lnAssets	.00063	-.00300	.00180
	(.00325)	(.00272)	(.00280)
laggedROA	-.29642***	.00932	-.14133***
	(.05034)	(.04231)	(.05027)
LEV	-.07293***	.01633	-.04965**
	(.02536)	(.02238)	(.02192)
F	11.40***	1.35	4.86***
R2	.016	.029	.0007
N	1530	751	779
Industry-year fixed effect	yes	yes	yes

Notes:
Two-tailed p-value denoted by asteriks are: ***less than 1%; *+ less than 5%; * less than 10%; all other variables are insignificant with p-value grather than 10%.

This table repots the robustness checks of H1, H2a and H2b.
For H1 we use Model 1 and we run the following regression:

$$change\_disCA_{ijt} = \beta_0 + \beta_1 change\_M/B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

For H2a we use Model 2 and we run the following regression:

$$+change\_disCA_{ijt} = \beta_0 + \beta_1 change\_M/B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

For H2b we use Model 3 and we run the following regression:

$$-change\_disCA_{ijt} = \beta_0 + \beta_1 change\_M/B_{ijt} + \beta_2 \ln Assets_{ijt} + \beta_3 laggedROA_{ijt-1} + \beta_4 LEV_{ijt} + \varepsilon_{ijt}$$

° all the variables are winsorized at the 2% level

2.3. Alternative model specification

All the regression analyses are fixed effect model controlling for year-industry effect. Given a panel data analysis (repeated observations on companies over years) the causal effect of firm's market value on earnings management can be estimated treating the statistical analysis through a fixed

effect model (Wooldrige, 2009; Angrist and Pischke, 2009). Assuming this model, we impose time independent effects for each observation that is possibly correlated with the regressors; in other words, the residuals for a given observation are not correlated across period. Due do the fact that panel data analysis implies repeated companies over time (so repeated observations over time), someone might argue that the statistical tests are significant just because the repeated observations are not independent. Assuming fixed effect model we control for the possible dependent observations bias in the results.

Anyway, to make the statistical tests even more robust we run yearly OLS regression for several years, starting from the 2010, year with the higher number of observations. Attachment 3 presents the results for the yearly regression. As shown the coefficient of the independent variable of the primary test is still positive and statistically significant. This analysis makes the primary results robust to the possible dependent observations bias.

VIII. CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

This study explores the link between firm's market value and earnings management incentives. In particular, we provide evidence consistent with the overvaluation hypothesis that predicts how managers of highly valued firms have strong incentive to manage earnings upwards. We demonstrate that an increasing in firm's market value induce managers to engage in income-increasing earnings management. When managers see the firm's market value going up they have the incentive to manipulate earnings upwards to sustain the increasing in firm's market value.

This result shows that the agency costs of overvalued companies proposed by Jensen (2005) also exist in Italy and, it is consistent with the existing literature in this field (Collins and Hirbar, 2000; Myers et al., 2006; Chi and Gupta, 2007, Badrtscher, 2010).

At the same time, our results show that a decreasing in firm's market value is correlated to income-decreasing earnings management. This could mean that when managers see the firm' s value going down they have incentive to manipulate earnings downward. In our opinion, this result is consistent with Badertscher's finding (2010) about the degree and duration of overvaluation and alternative methods of managing earnings. In case of decreasing in firm's market value managers of previous year overvalued companies engage in income-decreasing earnings management probably to correct (changing accruals accounting practice) previous upward accrual accounting manipulation, avoiding extreme forms of earnings management that are likely to induce accounting frauds.

In our opinion, the overall results also confirm the Houmes and Skantz (2010) suggestion that market prices drive accruals in contrast to the typical model where accruals drive the market price.

Moreover, we show that the primary test is robust to several sensitivities' analysis. In particular, we verify the robustness of our results to different earnings management proxies; using discretionary accruals as estimated by Jones model (1991) rather than total accruals.

As pointed out by Marciukaityte and Varma (2007) and Lev (2012) and, as is even more widespread belief also in the academic debate, earnings restatement is the best way to measure earnings management because, by definition, is an admission by management that earnings were improperly reported. Even if we used different methods provided by the literature to measure earnings management phenomenon, they still have significant weaknesses. McNichols (2000) in his study about the "Research design issues in earnings management studies", suggests that the aggregate accruals models that do not consider long-term earnings growth are potentially misspecified and can result in misleading inferences about earnings management behaviour (see: McNichols (2000) for the empirical issues about the earnings management proxies). We believe that this shortcoming is embedded into the methodology employed. Maybe alternative statistical analysis considering earnings restatement cases rather than accruals methodology could provide more insight on the topic. Unfortunately, we can not apply this methodology for the Italian contest, because earnings restatements are not mandatory for European countries and, despite our attempt we found only 20 restatement' cases in Italy. So, the lack of data makes statistical inferences impossible.

We also have the ambition to extend the empirical analysis to other European countries in order to verify if the results could be generalized to others insider system (such as: Germany, France, Spain, etc…etc…).

Despite the weakness related to the methodological approach, we think that the results of this research are relevant to understand managers' behaviours in playing earnings management *"game"* and, in which extant it is important to improve efficiency of securities markets in order to protect investor's interest.

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ATTACHMENTS

Attachment 1

Attachment 2

Attachment 3