

## THE NEED FOR TRANSPARENCY, RESPONSIBILITY AND ACCOUNTABILITY: THE CASE OF FACEBOOK IPO

Enrico Maria Cervellati\*, Adriano Di Sandro\*\*, Luca Piras\*\*\*

### Abstract

This paper aims to describe and critically analyse the Facebook Initial Public Offering (IPO), initially focusing on the pre-IPO assessments made by underwriters, and then comparing them with the market evidence. The initial weak performance disappointed all those investors believing in a fast stock increase, causing in turn the rise of bad expectations about the company's projects. As a matter of fact, the stock trend did not reflected the enthusiasm that the financial community showed during the IPO's marketing activity or during the road show. The stock demand was far superior than the supply during all the pre-IPO activities, and even after the upward revisions of the price range. Thus, the assessment of the valuation methods used to set the offer price plays a key role to explain the reasons of the stock performance. We analyse analysts' reports to investigate the reasons of their distorted valuations. The case of the Facebook IPO stresses the importance of supervision to ensure transparent financial statements and protect investors. Lack of transparency, wrong corporate culture and conflicts of interest may provoke stock crashes and damage investors and the financial system overall. Ensuring integrity of financial reporting and monitoring systems is thus essential to ensure responsibility, as well as accountability.

**Keywords:** Analysts' Recommendation, Conflicts of Interest, Distorted Valuations, Financial Supervision, Transparency and Accountability

\*University of Bologna, Luiss Guido Carli Rome

\*\*EUSCP Europe Business School

\*\*\*University of Cagliari

### 1. Introduction and Literature Review

Financial analysts' distorted valuations of hi-tech stocks have recently been lively debated after the IPOs of well-known companies like Facebook or LinkedIn (Cervellati, 2012). Scandals involving investment banks not only attracted the attention of the financial press, but were also under scrutiny of supervisory authorities. Analysts have been accused of having overstated the value of Internet companies at the time of the dotcom bubble, but also during the more recent hi-tech wave at the Nasdaq.<sup>1</sup>

In order to judge if analysts' valuations have really been distorted, we analyse the case of the Facebook IPO, and the relationship between the company, its underwriters, and financial analysts. The debate on the conflicts of interest faced by analysts affiliated to investment banks has always been rich and lively. Analyst may be willing to issue overly optimistic recommendations<sup>2</sup> on stock of companies that do business with the banks they are working for

(Michaely and Womack, 2005). Conflicts of interest are triggered by analysts' compensation schemes, often providing bonuses for those analysts that are able, with their reports, to attract business for their employers (Bradley et al. 2008; Bradshaw et al. 2003; Dechow et al. 2000; Dugar and Nathan, 1995; Lin and McNichols, 1998; Lin et al., 2003). Because another important part of the analysts' compensation depends on their reputation – often based on accuracy and timeliness of their recommendations (Hong and Kubik, 2003) – the conflicts of interest arise. Furthermore, financial analysts take care in building and maintaining good relationships with the management of the covered firms, the primary source of information for their analyses.

Analyst over optimism may be due to behavioural biases as well: e.g., the "selection bias" by which analysts may start covering a company because they like it (McNichols and O'Brien, 1997).

While former evidence (Michaely and Womack, 2005) showed that buy recommendations issued by affiliated analysts underperformed those issued by their independent peers, recent works do not support this evidence, showing that when the recommendation characteristics and timing are taken into account, there are no significant differences between affiliated and independent analysts, thus raising doubts on the real

<sup>1</sup> The Nasdaq Composite index increased dramatically since the Nineties, now being three times as large as twenty years ago.

<sup>2</sup> Analysts' optimism not only affects recommendations, but also their earnings estimates (Rajan and Servaes, 1997).

extent of conflicts of interest (Bradley et al., 2008; Clarke et al., 2006; Clarke et al., 2007; Fleuriet and Yan, 2006; Groysberg et al., 2005; Ljungqvist et al., 2006).

Other studies show that when the asset management branch of the bank affiliated analysts work for holds more stocks of the company they cover (Irvine et al., 2004). Analysts' recommendations also tend to be more optimistic if the stock of the covered company is held by mutual funds affiliated to the same bank (Mola and Guidolin, 2009). Furthermore, merger and acquisition bank advisors buy (sell) the acquirers that their affiliated analysts upgrade (downgrade) (Haushalter and Lowry, 2009). Jordan et al. (2011) show that sell-side equity research is used by the banks the affiliated analysts work for. This evidence shows that banks believe that their analysts' work is valuable, suggesting that conflicts of interest may be not so important, because the investment banks themselves follow their analysts' recommendations.

Studies in the literature deal with Internet companies' valuation and analysts' role in the dotcom bubble use distinct perspectives. Because during that period several high tech companies benefited from the hot issue market to go public, many studies analyzing the Internet bubble deal with the IPO process. The literature on IPOs has often focus on three main issue related to their timing – the so-called “hot issue market” phenomenon – to their initial performance – typically underpricing in the first day of trading –, and on their medium-long term (under)performance (Ritter, 1984). In IPOs, the information asymmetry between the management of the company going public and the investors is usually high since the firm is not usually so well-known.<sup>3</sup> In case of uncertainty, investors tend to use rules of thumb that help in taking decisions, known in behavioural finance as heuristics. For example, in period characterized by high asymmetric information, the “bandwagon effect” (Welch, 1992) can take place. This effect, also known as “information cascade”, refers to investors' preference to buy not every stock of companies that recently went public, but focusing on those ones that have already attracted other investors' attention. These companies are considered “hot”, or “glamorous”. Relying on the crowd's behaviour, rather than on their own judgements, investors minimize the potential future regret that they may feel in case of a wrong the choice.

The expression “hot market” refers to a period when valuations are irrationally overly optimistic. During such periods, the average first month performance of IPOs – i.e., the initial underpricing – is particularly high (Ibbotson and Jaffe, 1975). IPOs usually tend to concentrate in periods in which initial underpricing is rather high – i.e., the fact that the offer

price is below the closing price of the first trading day (Purnanandam and Swaminathan, 2004) – creating a “windows of opportunity” to go public (Loughran et al., 1994).

An alternative explanation of the initial underpricing comes from the bookbuilding process related theories, based on the “market feedback” hypothesis (Benveniste and Wilhelm, 1990), and the “agency conflict theory” (Jensen and Meckling, 1976). Following these theories, a company should be willing to accept a low offer price to create a “demand effect”, i.e., to be sure that the demand of its stocks will exceed the offering, thus being sure of the IPO's success.

Also, underwriters assure the company's management that the stock will be followed by a highly rated analyst, stressing the effects that a positive coverage will have on the stock price.

Very interesting insights are related to IPOs because in this case the potential conflict of interest is higher given that IPOs are very profitable for investment banks, and analysts' recommendations are particularly valuable since most firms are unknown by investor prior to listing and therefore need coverage to attract attention to them. Thus, a positive report could improve the probability that the underwriter will be chosen for the next security offering.

A further implication is that affiliated analysts could be much more “optimistic” in their recommendations if compared to independent ones, meaning that on average they issue more positive reports than independent analysts. In this case, if the market is efficient, it should react discounting for the difference between affiliated and non-affiliated analysts' recommendations. There is, however, an alternative explanation of this empirical evidence that we could call “Superior Information Hypothesis”. It states that investment banks have superior information on firms they have taken public, therefore their reports would not only be unbiased, but also more accurate. This alternative hypothesis can be considered credible if we think that information asymmetry is very high in initial public offerings. If this explanation results to be correct, then the market should react with a premium to underwriter analysts for the more accurate information they possess. In the post-IPO period this would imply a superior result for investors following underwriter recommendations.

These two alternative explanations are testable, looking at the long-run performance of IPOs differentiated by underwriter relationship.

The role of reports and of price-sensitive information produced by analysts has been studied in the literature, following different approaches.

Analysts play a very active role in the market. Not only do they convey information to the market, but they also produce it and select it, being very much aware of their function, power and responsibility. The relevance of their role is also assessed by the way

---

<sup>3</sup> Of course, as mentioned, Facebook is a notable exception to this general rule.

they interact with the other protagonists of the market: the investors.

In a business environment the drivers of protagonists' actions are mainly expressed in terms of utility. If we refer to investors or to covered companies, it is intuitively possible to qualify utility, but financial analysts too act in the market and pursue their subjective utility. It is, therefore, evident that they will try to maximize their utility, just as any other market actor will do. That is to say that they will tend to maximize their reputation as main source of value and minimize the risks deriving from their work. Reputation depends largely on how successful they are in interpreting market dynamics, since the value of the information conveyed depends on how successful their clients will be when investing as suggested. As a consequence, they try to maximize forecast accuracy or, in other words, to minimize the forecast errors. Risk is represented by the probability of errors. However, another source of risk is given by the single analyst decision on if and to what extent to deviate from other analysts' forecasts, or from the so-called "consensus", typically the mean or median forecast. Deviating from consensus is risky for an analyst since in case her forecast is less accurate than it, she would experience a reputational loss. Instead, if she aligns with consensus, and this proves not to be accurate, she can always share the blame with other analysts, and thus not be penalized in terms of reputation (Cervellati and Piras, 2012; Piras, Denti and Cervellati, 2012). Another important aspect to underline is that investors are more interested in those stocks more highly covered by analysts (Bradley et al., 2003), and more sensible to the so-called "glamour" stocks. For this reason, it is very important to understand if the conflicts of interest may affect the value of analyst recommendations, in particular with regard to the stocks of famous companies like Facebook. Analysts are not only overly optimistic about future prospects of the covered companies, but they are also overconfident in self-valuing their own predicting skills (Nicholson *et al.*, 1998; Barber and Odean, 2000). The concept of "fads" could explain long-term underperformance of IPOs (Aggarwal and Rivoli, 1990). In a broader view, behavioural finance studies argue that while the initial underpricing represents a market overreaction, the long run

underperformance is nothing but a correction of the former misvaluation.

After the above introduction and literature review, section 2 presents analyse the case of Facebook IPO, section 3 study analysts' reports, while section 4 concludes.

## 2. Facebook IPO, Underwriters' Role and Conflicts of Interest

Recently, some well-known US hi-tech companies went public. The most famous among them being Facebook, which IPO took place on May 18, 2012 at Nasdaq.

About a year before, LinkedIn, another important internet company, went public recording a first day underpricing of 103%. Groupon and Zynga followed thereafter - in November and December 2011 respectively - recording very good performances in the first months after the IPO, alike other firms like Jive and Guidewire. Zynga's return in the first ten weeks of trading has been around 50%. Jive Software almost doubled its offer price in the first three months of trading, while Guidewire Software doubled its offer price in just two months after the IPO. These high initial returns increased investors' optimism, and their confidence that a new hi-tech wave was about to come. Thus, Facebook went public in the midst of what seemed to be an "hot issue market". This "window of opportunity", characterized by several successful IPOs that attracted investors' attention, had the potential to increase the possibilities of an overvaluation of its stocks.

Facebook's IPO was considered by many investors as the greatest deal after Google's listing, the enterprise value being estimated as high as \$ 100 billion. The Facebook's stocks demand, during the pre-IPO activities and the road show, was characterized by a steady rise, although the price increased significantly during the last weeks before listing. The market's interest towards the public offering depended in part on the uptrend of the Nasdaq Composite Index, which increased by 139% since late 2009. Only analysing the quarter before the quotation, the index gained 19%, overcoming the Standard & Poor's 500 index by 700 basis points (Robinson, 2012). Figure 1 shows that the hi-tech index increased dramatically since October 2009.

Figure 1. Nasdaq Composite (October, 2009 – October 2013)



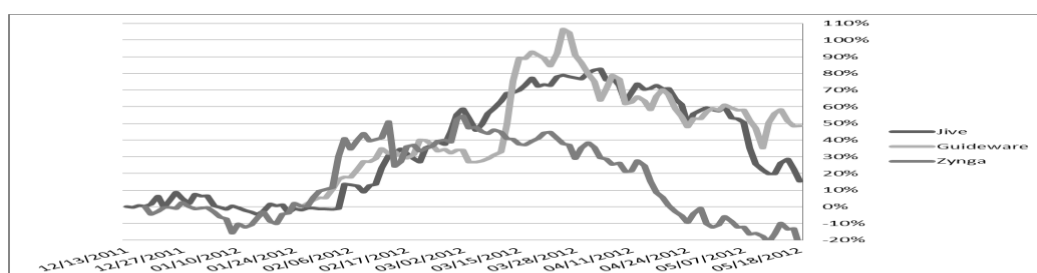
Source: www.nasdaq.com

This market momentum certainly contributed to inflate the stock demand and amplified the notoriety of the company based in Menlo Park. It is important to stress out that Facebook decided to go public in the midst of an intense IPO activity in the Nasdaq. The hot issue market began in 2011 and comprehended several high-tech companies listings, notable example being Groupon and Zynga. Thus, Facebook exploited the so-called “window of opportunity”, a period of time in which the concentrated issuance activity grabs investors’ attention towards the companies that are going public, boosting market prices, and thus

increasing the possibilities of overvaluation. In this context, the financial actors are more likely to pay a higher value in the primary market, in order to gain in the secondary one. The latest IPO is thus supported by previous ones.

This market situation cannot be defined as a new “dotcom” bubble, as the global economy was in recession, but it was clear that investors’ confidence in newly listed US companies has risen since 2009. Figure 2 shows the performance of the main technological stocks that have listed on Nasdaq since December 2011.

**Figure 2.** Performance of Jive, Guideware, Zynga since December 2011



Source: data re-elaborated from [www.nasdaq.com](http://www.nasdaq.com)

As Figure 2 describes, on average all the issuances have a positive trend in the three months after the IPO, fuelling market optimism. *Jive Software* almost doubled its offering price, and even better did *Guideware Software*, with a +104%. Zynga, instead, started with a very good performance (+50% after only three months), but since then saw its price falling dramatically.

Facebook, thanks to its perfect IPO timing, issued its stocks in a market that can be considered mature to welcome one of the greatest operations on the Nasdaq (Robinson, 212).<sup>4</sup>

At the beginning of the road show, the price range for Facebook listing was around \$ 25 – \$ 35, but as the demand becomes higher, the offering price range increased to \$ 28 – \$ 34. Moreover, few days before the listing, the company and the underwriters decided to rise again the price range to \$ 34 – \$ 38, a 20% growth from the average value of the first estimate. The night before the official listing, Facebook and its underwriters decided to set the offering price at the maximum limit of the range: 38 \$.

The price definition was combined with the expansion of the stock supply by 25%, through the enhancement of the stocks offered by the existing shareholder. With the volume increase, Facebook’s managers made the stock more liquid on the market,

satisfying at the same time the investors that did not manage to book the stocks before. The possibilities of initial underpricing, in turn, increased.

Furthermore, the contemporary rise of price and volume ensured higher incomes for the company. On the contrary, the dilution of capital grew in a less proportional way (respect to the volume increase) thanks to the two classes of stocks.

The upward revision of the price embraced the positive feedbacks of the investors during the road show, but as the academic literature suggests (Benveniste and Spindt, 1989), the price adjustment was only partial, in order to boost the initial underpricing and reward the investors that revealed their expectations.

In this case, however, the partial adjustment theory cannot be related to positive information: after few days from the listing, newspapers reported that Morgan Stanley, the leading underwriter of Facebook’s IPO, considerably cut its estimates about the company future revenues some days before the issuance, communicating those changes only to its “best” clients. If these reports were made public, their content would have probably lead to a decrease in the company expected revenues, and thus in the offering price.

The revenue CAGR would have been cut because the Facebook users’ increase was supposed to be principally driven by the growth of accesses from mobile devices (smartphone, tablet, etcetera). For these categories, however, Facebook had not implemented yet an efficient strategy that could increase cash flows. The downward price revision would have demolished the demand the first day of

<sup>4</sup> In an efficient market managers do not have any reason to choose the timing of an operation, as the market would always value the company at its true price. However, in practice, managers may believe (or know) that their stock is not fairly valued by the market.

trading, causing a dramatic price drop and probably the IPO's failure.

The Security Exchange Commission (SEC) started an investigation to ascertain what happened between Morgan Stanley and its clients, but the reputational damage of the company and its underwriters has been relevant, also leading to a class actions. The SEC investigation underlines the importance of the assessment of pre-IPO valuations. Despite the overall positive environment in the high-tech market, Facebook's IPO poorly performed in the first day of trading, and in the three following months. Furthermore, the overall market conditions were totally different from the dotcom bubble of end of the 1990s-beginning of 2000s, since the US economy in 2012 had not yet recovered from one of the greatest crisis ever. The enthusiasm that anticipated Facebook's listing, thus, vanished rapidly, as well as the belief that the Nasdaq was going through a new hi-tech wave. The sudden lack of investors' confidence negatively influenced the stock performance in the first trading weeks. Facebook stock price halved in the first three months after the IPO as shown in Figure 3.<sup>5</sup>

Even if the stock price eventually resumed and started growing since the bottom of August 2012, the initial poor performance disappointed thousands of investors that were expecting a fast stock price increase from the long awaited IPO of recent years.

To clarify the reasons of this disappointment, it is worth mentioning the structure of the IPO, and, more importantly, the overall gain of Facebook founder and CEO, Mark Zuckerberg. The overall stock issue was made of a new issuance and stocks sold by existing shareholders, who saw the listing as an occasion to wind up their investments. Zuckerberg was among the selling shareholders. The stocks offered were all class "A" shares, giving only one right to vote in formal meetings. Class "B" shares were not part of the offering, as each of them gave ten voting rights in formal meetings. The principal owner of the latest class of stocks was Zuckerberg himself that, in this way, preserved the control on the company from the capital dilution typical of IPOs. After the listing, he still owned the 55.8% of the voting rights. The number of stocks put up on sale by shareholders was around 241 million, while the new share issued were 180 million. The number of stocks included in the "over-allotment option" - that gives the issuer the possibility to increase by maximum 15% the stock supply once the company is listed - was about 63 million. The option could be exercised only if the stocks demand in the secondary market was high enough in order to rebalance the counterpart. The over-allotment option is always coupled with the "greenshoe option", which gives underwriters the right to purchase the extra supply offered. In

<sup>5</sup> Zynga and Jive shared a similar downtrend in the months after the IPO, halving their stock price from the peak value.

conclusion, the equity fraction that was listed on the Nasdaq was 20% of total equity, without considering the differences between the two classes of stocks. The total supply of stocks included Zuckerberg's exercise of a *call* option on 60 million of class "B" shares. Half of the total option would have been converted in class "A" shares and offered to the general public on the first day of trading. Considering a selling price of \$37.58, Zuckerberg gained \$ 1.13 billion on the IPO day, from the exercise of the option. Given the post-IPO performance, it could be defined as an optimal strategy to cash out part of the investment (Bates et al., 2012).

### 3. Analysts' valuations of Facebook stock

During the internet bubble of the end of the Nineties-beginning of 2000s, financial analysts had a major role in spreading the so-called "irrational exuberance" (Shiller, 2000). Analysts affiliated with investment banks that do business with the covered companies face a dramatic conflict of interest since on one hand issuing negative recommendations can impact their salary, as well as their career opportunities, on the other, they have to protect their reputation issuing reliable valuations.

Table 1 summarises financial analysts' recommendations and target prices<sup>6</sup> issued on Facebook between June 4, 2012 and April 4, 2013.

In what follows we separately analyze the target prices estimated issued by distinct banks. Analyzing Credit Suisse reports, we compare target price with current price in Figure 4.

The target price significantly drops as the WACC is increased by 1% (from 9.5% to 10.5%) in October 2012. This radical change is supported by a reduction of the NPV of Facebook's activities, as the "blue sky opportunities"<sup>7</sup> are included in the valuation only at the 50% of their value, and not at 100% as included in the first reports. It is crucial to underline that these opportunities comprehend projects that Facebook would probably implement in a near future, but there is no evidence or approval by the management at the report's date. These projects added 6 dollars to the "basic" valuation, so taking into account only the 50% the upward given by future projects is represented by \$3. It is important to highlight that is quite unusual that analysts take into account NPVs of projects that are not approved yet, basing their valuation on subjective assumptions.

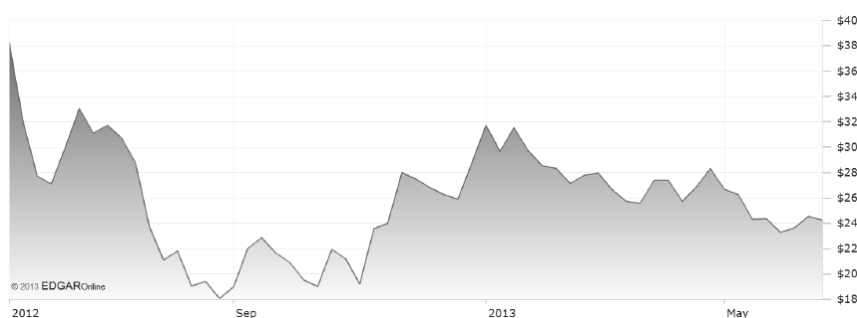
<sup>6</sup> The target price is the estimated stock price in one year time.

<sup>7</sup> The expression "blue sky opportunities" refers to the future projects that financial analysts take into account in their valuation of the company. However, those are just opportunities that can create value in the medium-long term and their intrinsic value is added to the "base case" on a percentage basis, depending on the probability of the event.

Credit Suisse analysis throughout the period assessed are based on the Discounted Cash Flow Model, and except for the first two reports, the

WACC remains stable at 10.5%. As showed in graph, the target prices tend not to perfectly react to the changes in the current prices.

**Figure 3.** Facebook stock trend (May 18, 2012 – June 15, 2013)



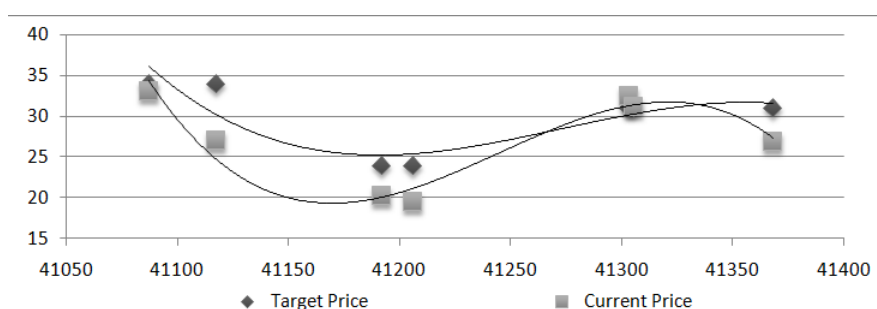
Source: www.nasdaq.com

**Table 1.** Summary of analyst’s Recommendations on Facebook stock

Bank	Date	Rating	Target Price \$	Current Price \$	WACC
Bernstein Research	06/04/2012	Underperform	25	27.72	11%
Bernstein Research	06/12/2012	Underperform	25	27.10	11%
Goldman Sachs	06/27/2012	Buy	42	33.10	-
Credit Suisse	06/27/2012	Neutral	34	33.10	9.50%
Goldman Sachs	07/09/2012	Buy	42	32.17	-
Goldman Sachs	07/19/2012	Buy	42	29.11	-
Bernstein Research	07/24/2012	Underperform	25	28.75	11%
Bernstein Research	07/26/2012	Underperform	25	28.45	11%
Goldman Sachs	07/26/2012	Buy	42	29.34	-
Goldman Sachs	07/27/2012	Buy	42	26.85	-
Credit Suisse	07/27/2012	Neutral	34	27.00	9.50%
Bernstein Research	07/31/2012	Underperform	23	23.15	11%
Goldman Sachs	09/21/2012	Buy	37	22.59	-
Goldman Sachs	09/21/2012	Buy	37	20.62	-
Goldman Sachs	10/04/2012	Buy	37	21.83	-
Goldman Sachs	10/05/2012	Buy	37	21.95	-
Credit Suisse	10/10/2012	Neutral	24	20.23	10.50%
Goldman Sachs	10/22/2012	Buy	37	19.00	-
Credit Suisse	10/24/2012	Neutral	24	19.49	10.50%
Goldman Sachs	10/24/2012	Buy	35	19.50	-
Bernstein Research	11/26/2012	Outperform	33	24.00	Shift to EV/EBITDA
Bernstein Research	12/06/2012	Outperform	33	27.04	Shift to EV/EBITDA
Goldman Sachs	01/04/2013	Buy	35	27.77	-
Bernstein Research	01/06/2013	Outperform	33	30.10	Shift to EV/EBITDA
Goldman Sachs	01/16/2013	Buy	38	30.10	-
Credit Suisse	01/29/2013	Neutral	31	32.46	10.50%
Credit Suisse	01/31/2013	Neutral	31	31.24	10.50%
Goldman Sachs	01/31/2013	Buy	40	31.24	-
Bernstein Research	02/12/2013	Market Perform	27	28.55	Shift to EV/EBITDA
Goldman Sachs	02/25/2013	Buy	40	27.13	-
Goldman Sachs	03/01/2013	Buy	40	27.25	-
Goldman Sachs	03/05/2013	Buy	40	27.72	-
Credit Suisse	04/04/2013	Neutral	31	26.99	10.50%

Source: our elaboration of the information provided in the analysts’ reports

**Figure 4.** Credit Suisse's target prices vs. current prices



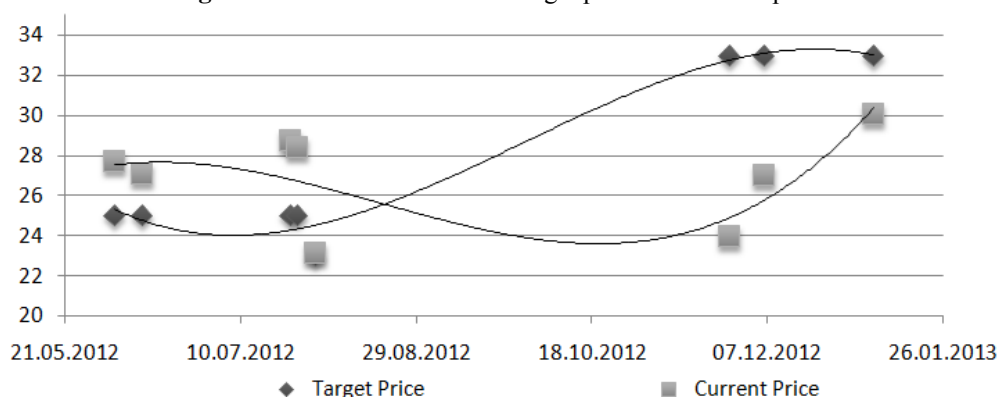
Source: our elaboration of the information provided in the analysts' reports

Since January 2013, in fact, can be seen that both target prices recover from the minimum of October: this is due to the really strong fourth quarter of Facebook, that managed to increase its Monthly Active Users and revenues. This achievement led to an improvement of all the crucial assumptions of financial analysts, triggering an increase of the target prices. As mentioned before, the main concerns on Facebook's first valuation were about the monetization of new users that log into the social network from mobile phones or tablets, and the strong response of Facebook's financials reassured the

market and the analysts. In particular, Credit Suisse research team upward revised revenues from advertising activities and the target price, but the recommendation remained Neutral as analysts were waiting more signals of a stable recover. In the January report, the research team aligned its valuation to other team's one, and took out the blue sky opportunities, shifting to a straightforward DCF.

Figure 5, instead, display the comparison between current and target prices issued by Bernstein.

**Figure 5.** Bernstein Research's target prices vs. current prices



Source: our elaboration of the information provided in the analysts' reports

It is interesting to note that the target price trend is opposite to the Credit Suisse's one: in the first reports (June 2012), the valuation is based on a DCF model analysis, that used a WACC of 11%, in line with the rate used by other analysts.

The valuation resulted in a target price that was 11% below the current price, as Bernstein Research had more conservative estimates, and did not take into account future opportunities in the calculation of the share price.

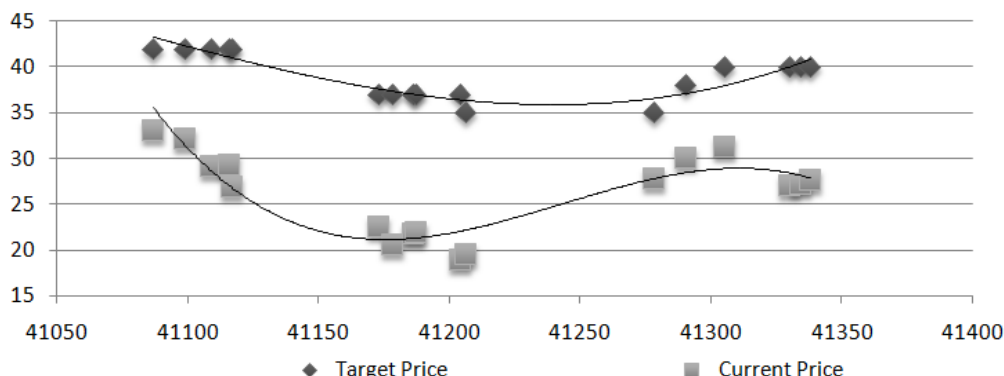
Moreover, when the first report was issued, the research team was aware of the reaction of the market to the IPO, and the general sentiment had certainly affected the valuation. Since November 2012 Bernstein Research implemented its valuation with market multiples, and in particular EV/EBITDA, instead of DCF model. This change in the valuation

method coincided with both the highest point of the target prices' slope, and the maximum vertical differences between the two slopes. Facebook's market price, indeed, started its recovery but was yet to value more than \$32, what BS stated in November. On account of this, the positive effect on the target price made by the new financial method use had a strong impact on the TP. This is the outcome of one main reason: the new valuation took into account the average market valuation of Facebook (expressed by the EV/EBITDA used), when the firm was achieving good performances after the deep decrease of the quote during the summer. Therefore, there was an increasing enthusiasm on the new results, that affected all the high tech market and even the peers used to calculate multiples. In addition, BS in the report used an average multiple that is 15% above the

consensus, given the revenues growth rate expectations.

Figure 6 shows that Goldman Sachs' target prices were constantly higher than current prices.

**Figure 6.** Goldman Sachs' target prices vs. current prices



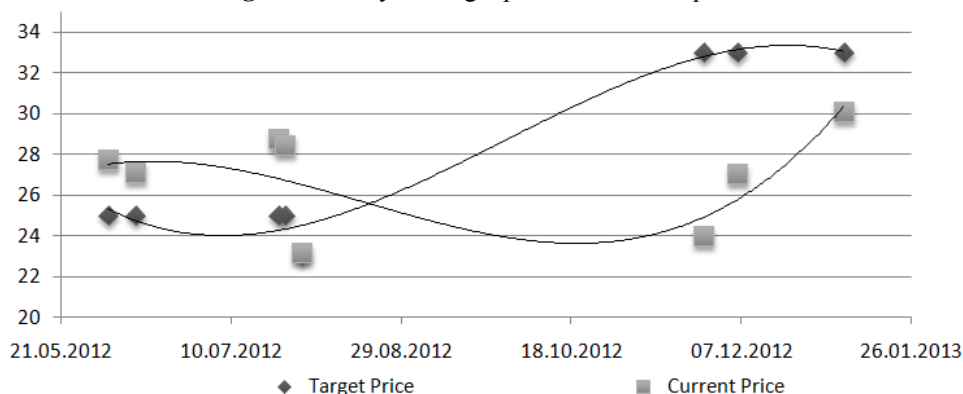
Source: our elaboration of the information provided in the analysts' reports

Even if the target price has a time horizon that is set at 12 months, it is worth underlining that the estimation does not change even with a notable downward trend of the price, which after five months is more than halved. We can infer that the new information that the markets acquired during the first months of quotation do not influence the valuation model made by Goldman Sachs. The initial coverage in June 2012 implies a WACC of 10.5% (slightly lower than the one assumed by Bernstein), and a multiple valuation of 80x P/FCF, while the mean of comparables is 60x (even if the Facebook FCF calculated is different from the normal one). Moreover, analysts estimate a Revenue CAGR of 21.4% during the period 2013-2021. This seems a really positive estimation, considering that the Facebook's Monthly Average Users are increasing

thanks to the mobile phones, where Facebook has not yet implemented ways to monetize the accesses. In addition, from 2011 to 2012 revenues rose by 30%, so the long term estimation have to take into account the uncertainty of future scenarios. The two years before the IPO were extremely profitable for Facebook, and it seems difficult to achieve almost the same growth rate in the long term with the problems the company is currently facing with. Included in the valuation there is the NPV of the company's tax benefit that relates to the exercise of employee stock options. The NPV is estimated at \$ 4.6 billion, but the value can change according to future events: it depends on how many options are exercised and when.

Figure 7 illustrates the general trend of target prices and the trend of Facebook historical prices.

**Figure 7.** Analysts' target prices vs. current prices



Source: our elaboration of the information provided in the analysts' reports

The price drop occurred between May and October 2012 is not corresponded by a significant drop in target prices. The valuations, indeed, took into account estimations of revenues growth that were almost impossible to achieve. This over-valuation seems triggered the various class actions that occurred soon after the IPO.

The target prices curve is principally kept higher than current prices curve by the Goldman Sachs' estimations, that are always 5 – 10 dollars above the target prices predicted by Credit Suisse and Bernstein Research.



#### 4. Conclusions

Analysts' distorted valuations are caused both by conflicts of interest and behavioural biases. We use the case of Facebook's IPO to highlight both these aspects in the choice taken by the company and by its underwriters. Even if it is well-known that hi-tech companies are difficult to estimate, valuation heuristics may distort value estimation, ending in analysts' over optimism in their valuations.

We focus on the pre-IPO assessments made by the underwriters, and then compare it with the subsequent market response. Because the initial weak performance disappointed those investors believing in a fast stock increase, it caused in turn the rise of negative expectations about the company's projects. As a matter of fact, the stock trend did not reflected the enthusiasm that the financial community showed during the IPO's marketing activity or during the road show when the stock demand was far superior the supply during all the pre-IPO activities, and even after the upward revisions of the price range. Thus, we claim that the assessment of the valuation methods used to set the IPO price assumed a key role to find the reasons of the stock performance.

The case of Facebook stresses the importance of supervision to ensure transparent financial statements and protect investors. Lack of transparency, wrong corporate culture and conflicts of interest may provoke stock crashes and damage investors and the financial system overall. Ensuring integrity of financial reporting and monitoring systems is thus essential to ensure responsibility, as well as accountability.

#### References

1. Aggarwal, R., Rivoli, P. (1990) "Fads in the initial public offering market", *Financial Management* (Winter), pp. 45-57.
2. Ball R. and Brown P. 1968. "An Empirical Evaluation of Accounting Income Numbers", in *Journal of Accounting Research*, vol. 6, pp. 159-78.
3. Barber, B. M., and T. Odean (2000) "Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors," *Journal of Finance*, LV, pp. 773-806.
4. Barber, B., R. Lehavy, M. McNichols, and B. Trueman (2001) "Can Investors Profit from the Prophets? Consensus Analyst Recommendations and Stock Returns," *Journal of Finance*, 56, 2, pp. 531-563.
5. Bates, B., Zannie, M., Durante, T. (2012) "Morgan Stanley to reimburse investors ripped off by Facebook trades... as embattled social network may switch to New York Stock Exchange over bungled IPO.
6. Belcredi M., Bozzi S., Rigamonti S. (2003) "The impact of research reports on stock prices in Italy" working paper, Università Cattolica del Sacro Cuore e Università Luiss "G.Carli".
7. Benveniste, L.M., Wilhelm, W.J. (1990) "A comparative analysis of IPO proceeds under alternative regulatory environments", *Journal of Financial Economics*, 28, pp. 173-207.
8. Bertoni F., Giudici G., Randone P.A., Rorai U. (2003) "Informativa aziendale, stime reddituali e analisi finanziaria: il ritorno delle convergenze parallele", mimeo.
9. Bradley, D., Jordan, B., and Ritter, J. (2003) "The Quiet Period Goes Out With a Bang", *Journal of Finance*, 58, pp. 1-36.
10. Brav, A., Lehavy, R. (2003) "An empirical analysis of analysts' target prices: Short-term informativeness and long-term dynamics", *Journal of Finance* 58, pp. 1933-67.
11. Brealey R., Myers S., Allen F. (2010) *Principles of Corporate Finance*, 6<sup>th</sup> edition, McGraw-Hill.
12. Brown S., Warner J. (1985) "Using daily stock returns: the case of event studies", *Journal of Financial Economics*, n. 14, pp. 3-31.
13. Cervellati E. M. (2012) "Analysts' Distorted Valuation of Hi-Tech Stocks", *Corporate, Ownership & Control Journal*, Vol. 10, Issue 1, Continued - 3.
14. Cervellati E. M., Della Bina A. C. F., Pattitoni P. (2007a) "Equity research credibility in the Italian Stock Market", *Corporate, Ownership & Control Journal*, Vol. 4, Issue 4, Summer (Special Issue: Corporate Governance in Italy), pp. 59-77.
15. Cervellati E. M., Della Bina A. C. F., Pattitoni P. (2007b) "Investment value of recommendation in the Italian stock exchange", *Corporate, Ownership & Control Journal*, Vol. 4, Issue 4, Summer (Special Issue: Corporate Governance in Italy), pp. 78-91.
16. Cervellati E. M., Della Bina A. C. F., Pattitoni P. (2008) "The efficiency of the Italian stock exchange: market reaction following changes in recommendations", *Corporate, Ownership & Control Journal*, Vol. 5, Issue 2, Winter 2008 - Special Issue, pp. 432-48.
17. Cervellati, E.M., Piras, L. (2012) *Inform and Deform. Do financial analysts mean what they say?*, Virtus Interpress.
18. Clarke, J., Ferris, S., Jayaraman, N., & Lee, J. 2006. "Are analyst recommendations biased? Evidence from corporate bankruptcies", *Journal of Financial and Quantitative Analysis*, 41: 169-196.
19. Cooper M.J., Dimitrov O., e Rau R. (2000) "A Rose.com by any other name", *Journal of Finance*, 56, pp. 2371-88.
20. Cooper S., Debow S., Coburn P. (2000) "Navigating the i-Valuation jungle. Equity valuation in the new economy: how to value Internet stocks", UBS Warburg.
21. Damodaran A. (2001) *The Dark Side of Valuation*, FT Press.
22. Dugar, A., and S. Nathan (1995) "The Effect of Investment Banking Relationships on Financial Analyst's Earnings Forecasts and Investment Recommendations", *Contemporary Accounting Research*, 12(1), pp. 131-160.
23. Earlam M., Streets J., Jensen P. (2000) "Invaluable but overvalued?", UBS Warburg research report.
24. Earlam M., Streets J., Jensen P. (2001) "Invaluable but overvalued. Part II: finding the floor?", UBS Warburg research report.
25. Fama E., Fisher L., Jensen M. and Roll R. 1969. "The Adjustment of Stock Prices to New Information", in *International Economic Review*, X, February, pp. 1-21.

26. Fama, E. 1970. "Efficient Capital Markets: A Review of Theory and Empirical Work," in *The Journal of Finance*, Vol. 25, No. 2, May, 1970, pp. 383-417.
27. Fama, E., French K.R. 1992, The Cross Section of Expected Returns, in *Journal of Finance*, vol. 42.
28. Hong, H., Lim, T., & Stein, J. 2000. "Bad news travels slowly: Size, analyst coverage, and the profitability of momentum strategies", *Journal of Finance*, 55: 265-295.
29. Ibbotson, R. and J. Jaffe (1975) "Hot issue markets", *Journal of Finance*, 30, pp. 1027-42.
30. Independent Mail (2012) "Regulators probe bank's role in Facebook IPO".
31. Jensen, M.C. and W.H. Meckling. (1976) "Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure", *Journal of Financial Economics*, 3 (4), pp. 305-360.
32. Johnsson M., Lindblom H., Platan P. (2002) Behavioral finance and the change of investor behavior after the speculative bubble at the end of the 1990s, Master's thesis, Lund University.
33. Kindleberger C.P. (1978) *Manias, Panics and Crashes: A History of Financial Crises*, Palgrave Macmillan, 2005, 5th edition.
34. Loughran, T., J. R. Ritter, and K. Rydqvist. (1994) "Initial public offerings: International insights", *Pacific-Basin Finance Journal*, 2, pp. 165-199.
35. March J.G., A Primer on Decision Making: How Decisions Happen, Free Press, New Haven, 1994.
36. Markowitz, H.M. 1952. "Portfolio Selection", in *The Journal of Finance*, 7 (1): 77-91, March.
37. Markowitz, H.M. 1959. Portfolio selection: Efficient diversification of Investments, Yale University Press, New Haven.
38. McNichols, M. and P. O'Brien (1997) "Self-Selection and Analyst Coverage", *Journal of Accounting Research*, 35, pp. 167-199.
39. Meulbroek L. (1992) "An empirical analysis of illegal insider trading", *The Journal of Finance*, 47(5), pp. 1661-99.
40. Michaely, R., and Womack, K. 2005. "Brokerage recommendations: Stylized characteristics, market responses, and biases", in Thaler, R. (Ed.), *Advances in Behavioral Finance II*. Princeton University Press, NJ.
41. Mikhail, M. B., B. R. Walther and R. H. Willis 2007. "When Security Analysts Talk, Who Listens?", *The Accounting Review*, Vol. 82, No. 5, pp. 1227-53.
42. Miller, G.S., 2009, "Should managers provide forecasts of earnings? A review of the empirical literature and normative policy recommendations". [http://www.capmktreg.org/pdfs/09-Sept-15\\_CCMR-Miller\\_Study\\_on\\_Earnings\\_Guidance.pdf](http://www.capmktreg.org/pdfs/09-Sept-15_CCMR-Miller_Study_on_Earnings_Guidance.pdf).
43. Mokoteli, T. and Taffler, R. 2009. "The roles of cognitive bias and conflicts of interest in analyst stock recommendations", *Journal of Business Finance & Accounting*, 36: 384-418.
44. Mokoteli, T., Taffler, R. J. and V. Agarwal 2009. "Behavioural Bias and Conflicts of Interest in Analyst Stock Recommendations", *Journal of Business Finance & Accounting*, 36(3) & (4), 384-418, April/May.
45. Palmer, F.R., 1986, *Mood and Modality*, Cambridge University Press, Cambridge, 51,96.
46. Peixinho, R. and Taffler, R. 2010. Do analysts know but not say? The case of going-concern opinions", CEFAGE-UE Working paper 2011/09.
47. Peixinho, R. and Taffler, R. 2011. "Are analysts misleading investors? The case of going concern opinions", CEFAGE-UE Working Paper 2011/22.
48. Piras, L., Denti, O., Cervellati E. M. (2012) "Analyst reluctance in conveying negative information to the market", *Journal of Governance and Regulation*, vol. 1 (4), pp. 7-22.
49. Purnanandam, A. K., and B. Swaminathan, 2004, "Are IPOs Really Underpriced?", *Review of Financial Studies*, 17, pp. 811-848.
50. Ritter, J.R. (1984) "The 'Hot Issue' Market of 1980", *Journal of Business*, 57, pp. 215-240.
51. Robinson, M. A. (2012) "These High-Tech IPOs Are Fueling the Nasdaq Rally", available at the url: <http://moneymorning.com/2012/04/02/these-high-tech-ipos-are-fueling-the-nasdaq-rally/>.
52. Scholes M. 1969. A Test of the Competitive Hypothesis: The Market for New Issues and Secondary Offerings, unpublished Ph.D. thesis, Graduate School of Business, University of Chicago.
53. Shefrin, H. 2002. Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing. Oxford University Press, New York.
54. Shefrin, H. 2006. Behavioral Corporate Finance. Decisions that Create Value. McGraw Hill.
55. Shefrin H. (2007) Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing, Oxford University Press.
56. Shefrin H. (2008) *Ending the Management Illusion*, McGraw-Hill.
57. Shiller, R. (2000) *Irrational exuberance*, Princeton University Press.
58. Shleifer A. and Vishny R. 1997. "The Limits of Arbitrage", in *The Journal of Finance*, vol. 52 March.
59. Taffler, R., Lu, J., and Kausar, A. 2004. "In denial? Stock market underreaction to going-concern audit report disclosures", *Journal of Accounting & Economics*, 38: 263-296.
60. The Telegraph (2012) "Nasdaq blames software design for Facebook IPO delay": <http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/9279006/Nasdaq-blames-software-design-for-Facebook-IPO-delay.html>.
61. Welch, I. (1992) "Sequential sales, learning, and cascades", *Journal of Finance*, 47(2), pp. 695-732.
62. Womack, K. L. (1996) "Do Brokerage Analysts' Recommendations Have Investment Value?" *Journal of Finance*, L1 (no.1), pp. 137-167.