Analyst coverage following the IPO of Facebook

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ABSTRACT

This study is to examine analyst coverage following the IPO of Facebook Inc. With hand-collected data of target prices issued by financial analysts as proxy for analyst coverage, the determinants of analyst coverage optimism are identified. The results show that analysts affiliated with the lead underwriters provide more optimistic coverage. Consistent with previous studies, there is no evidence that the market discounts the coverage issued by analysts affiliated with lead underwriters.

Keywords: Financial analyst, analyst coverage, target price, IPO, investment banking

INTRODUCTION

On May 18, 2012, Facebook Inc., the most popular internet service in the world at the time, went public with an initial public offering at $38 per share and listed in NASDAQ. As the largest initial public offering (IPO) in technology sector in the history, Facebook receives a lot of attention and coverage from financial analysts. This paper examines analyst coverage on Facebook IPO from May, 2012 to April, 2013. Researchers have realized that analysts affiliated with the IPO underwriters could provide favorable coverage (e.g., Bradley, Jordan, Ritter, 2003; James and Karceski, 2006; Michaely and Womack, 1999). Controversy over analyst coverage during the bubble period of 1999-2000 results in the Global Settlement between regulators and major investment banks in 2003, part of which is to financially support and promote more independent analyst research.

In this case study, target prices issued by financial analysts are used as proxy for analyst coverage and main test is to investigate the factors related to target prices. First, the results show that analyst affiliation plays a significant role. Specially, analysts affiliated with the lead underwriters provide more optimistic coverage in terms of target prices. While there is no difference between the analysts affiliated with banks in the IPO underwriting group and those analysts not in the underwriting group, analysts affiliated with institutions without investment banking business do issue less optimistic coverage, compared to those affiliated with investment banks. Second, there is evidence that the analysts covering Facebook are less optimistic right after the quiet period. In addition, there is no evidence for the effect of the reputation of the investment banks or the analysts' CFA designation.

Then the tests regarding market reaction to analyst coverage are conducted. It is found that the more favorable the analyst coverage is, the higher the abnormal returns upon the announcement of the coverage. There is no evidence that the coverage from analysts affiliated with lead underwriters is discounted by the market, which suggests the value of analyst research from underwriters is not destroyed by the conflict of interests in market perception. This is consistent with previous studies (e.g., Bradley, Jordan, Ritter, 2008; Jordan, Liu, Wu, 2012).

When it comes to the interpretation of the results, one has to be cautious. One interpretation for the favorable coverage from analysts affiliated with lead underwriters is about the conflict of interests related to underwriting deals (e.g., Michaely and Womack, 1999). However, another interpretation could be convincing too. That is, analysts affiliated with lead underwriters may have better ability and more resources, which lead to higher research quality. Considering all of the lead underwriters for the Facebook IPO are major institutions, the increased regulatory scrutiny in recent years, and the continuing improved performance of Facebook Inc., the favorable coverage by analysts affiliated with lead underwriters could be an indication of their insights regarding the firm's value. The results that market reaction (i.e., abnormal returns upon the target price issuance) does not discount the coverage from lead underwriters seem consistent with this interpretation. [1]

[1] Clearly, this interpretation is not the only plausible one due to the nature of the research design in this study.

The rest of the paper is organized as follows. Section 2 covers literature review. Research method is described in Section 3. Section 4 reports the empirical findings. Conclusions and discussions are presented in Section 5. The variables used in this paper are defined in the appendix.

LITERATURE REVIEW

This study is related to literature on analyst coverage following IPOs. During past two decades, empirical studies have been conducted regarding analyst coverage, especially analyst optimism (e.g., Rajan and Servaes, 1997). In literature, one important explanation for analyst optimism or favorable analyst coverage is the conflict of interests related to investment banking deals (e.g., Dugar and Nathan, 1995; Lin and McNichols, 1998; Michaely and Womack, 1999). First, there may be implicit agreement between an IPO issuer and its underwriters that analysts affiliated with underwriters should issue favorable coverage on the stock following the IPO. Second, even those investment banks which are not in the IPO underwriting group may issue favorable coverage to curry favor with issuers for the potential business including seasonal offering (SEO) and M&As in the future. Controversy related to the conflict of interests above has resulted in the Global Settlement in 2003 and hence more independent analyst research. Besides the conflict of interests, other reasons could help to explain analyst behavior including self-selection bias (e.g., McNichols and O'Brien, 1997), psychological bias (e.g., Dolvin, Pyles, Wu, 2009), and information advantage due to superior ability and resources (see Bradley, Jordan, Ritter, 2008).

The case of Facebook, the largest technology IPO, is used to examine analyst behavior. To the authors' knowledge, this is the first case study on analyst coverage in recent years. Unlike most previous studies using data from IBES or first call (except Bradley, Jordan, and Ritter, 2008), hand-collected data of target prices issued by analysts are used in this study. Since the Global Settlement between major investment banks and regulators in 2003 and the more recent financial crisis in 2007-2009, financial industry has been through a lot of changes including increased regulatory scrutiny. This study attempts to contribute to the literature by providing evidence for analyst behavior under new market condition and regulatory environment based on the most recent data from a high profile IPO.

RESEARCH METHOD

Data Collection

Analyst coverage, on Facebook Inc. is obtained from websites that provides analyst research. The data collection starts with Briefing.com[2], supplemented by Streetinsider.com, Analystratings.net, and Morningstar.com. Information collected includes target prices, institutions that issue the target prices, analyst name (if available), and the issuance date. Duplicated coverage from different websites is identified through analyst name, issuance date, and contents of coverage. When the inconsistency regarding the issuance date for the same coverage appears from different websites, the earliest date

[2] Bradley, Jordan, and Ritter (2008) also obtain analyst coverage data from Briefing.com.

is recorded as the issuance date. The sample period starts from May, 2012 until April, 2013. In the sample period, there are 117 target prices on Facebook Inc.

Variables

In this study, target price ratio (*Target*) is used as measure for the strength of analyst coverage because of its informativeness (e.g., Brav and Lehavy, 2003). Following previous studies (e.g., James and Karceski, 2006), target price ratio (*Target*) is defined as the ratio of target price issued by financial analysts over the close price of Facebook on the day before the target price is announced. Compared to target price ratio, the buy/sell recommendations have some issues including its subjective nature (i.e., the same rating by different analysts could have different meanings) and the lack of variation[3].

Multivariate regression analyses are conducted to examine the determinants of the target price ratio (i.e., *Target*). To investigate if the optimism of analyst coverage changes over time, the variable, *Day*, the number of calendar days from the IPO to when a target price is issued, is put into the regressions. In previous studies (Bradley, Jordan, Ritter, 2003; Bradley, Jordan, Ritter, 2008), it is documented that the time right after the quiet period (the quiet period is the first 40 days after an IPO based on current rule. During the quiet period, analysts in the IPO underwriting group are restricted by the Securities and Exchange Commission, SEC, from issuing any coverage for the listed firm) is an important time window of analyst coverage initiation. The variable, *Quiet*, a dummy variable indicating if a target price is issued right after the quiet period (i.e., day 40 to day 45) is constructed. To identify if the analysts affiliated with banks involved in the underwriting deal of Facebook IPO, two variables (*Lead* and *Aff*) are constructed based on the IPO prospectus of Facebook. *Lead* is a dummy variable, equal to 1 if a target price is issued by an analyst affiliated with an investment bank that is one of the IPO leading underwriters; 0 otherwise. *Aff* is a dummy variable indicating if a target price is issued by an analyst from an investment bank in the IPO underwriting team. *Non-IB* is to distinguish between analysts affiliated with investment banks and those affiliated with non-investment banks. It is equal to 1 if a target price is issued by an analyst from an institution that has no investment banking business; 0 otherwise. *Rank* is from Jay Ritter's updated Carter-Manaster (1990) ranking list as a proxy for the reputation of an investment bank. Looking into earnings forecasts, Franco and Zhou (2009) documents that analysts with CFA designation are modestly less optimistic than those without such designation. Based on analyst names and their affiliation on the directory of the CFA Institute, a dummy variable (*CERTIFED*) for analysts' CFA designation is used to control for the effect of the CFA certification.

Descriptive statistics are reported in Table 1. The mean and median of *Target* are 1.27 and 1.23, respectively, indicating that the target prices are on average more than 20% higher than the market price prior to the issuance of the target. The average number of days between an analyst coverage and IPO is about 158. About 11% of target prices are issued right after the quiet period. About 11% of target prices in the sample are issued by

[3] In unreported results, buy/sell recommendations are used for robustness check and conclusions are consistent with the results based on target price ratio. However, the lack of variation in recommendations is identified in the data. For example, all of the recommendations by the analysts affiliated with different lead underwriters are at the level of 'buy.'

the analysts affiliated with lead IPO underwriters and 29% are issued by analysts affiliated with banks in the underwriting team. About 22% are issued by analysts work for institutions that have no investment banking business. The mean of Carter-Manaster rank is about 2.64 and the median is 7. About 22% of target prices are issued by analysts with the professional designation of CFA. [4]

EMPIRICAL RESULTS

The results for the determinants of target price ratio are presented in Table 2. In Model 1 there are four variables (*Day*, *Quiet*, *Lead*, and *Aff*) in the regression and then additional three variables (*Non-IB*, *Rank*, and *CERTIFIED*) are put into Model 2. In both models, the negative and significant coefficients on the variable, *Quiet*, indicate that the target prices issued right after the quiet period are less optimistic than those issued at other time. More interestingly, the coefficients on the variable *Lead* are positive and significant in both models. This suggests that lead underwriters are more optimistic than those institutions not being lead underwriters of the Facebook IPO. Looking into the economic significance, the coefficient of .1652 on *Lead* in Model 2 suggests that, on average, the target price ratios from lead underwriters are 16.52% higher than those issued from other institutions after controlling for other variables in the regression. In Model 2, the negative and marginally significant (with *p*-value=.08) coefficient on the variable *Non-IB* suggests that the institutions without investment banking business are not as optimistic as those investment banks.

How market reacts to analyst coverage is then examined. As shown in Table 3, the variable *Target* and other variables same as in Table 2 are put into the regressions. The dependent variable here is the cumulative abnormal return (*CAR*) upon the announcement of the target prices. In the spirit of Bradley, Jordan, and Ritter (2008), *CAR* is defined as $(1+Ret_{fb,-1}-Ret_{m,-1})*(1+Ret_{fb,0}-Ret_{m,0})-1$, where $Ret_{fb,-1}$ and $Ret_{m,-1}$ is the return of Facebook and NASDAQ index, respectively, on day -1(i.e., the day before target price issuance), where $Ret_{fb,0}$ and $Ret_{m,0}$ is the return of Facebook and NASDAQ index, respectively, on day 0 (i.e., the issuance day). In both Model 1 and Model 2, the positive and highly significant (with *p*-value<.0001) coefficients on the variable, *Target*, suggest the announcement returns increase when target prices are more optimistic. In terms of the economic significance, based on the coefficient of .1432 on *Target* in Model 2, with one standard deviation increase in *Target* (.2872), the magnitude of CAR will increase by about 4.11% (=.1432*.2872) after controlling for other variables in the regression. The coefficients on the variable *Day* are positive and significant, indicating that with the increase of the time from the target price issuance date to the IPO date, the market reaction to the issuance becomes more positive. The coefficient on the variable *Lead* is not statistically significant and other variables are not significant either.

As a further test to see if the market reaction to target prices issued by lead underwriters is different, the interaction term of *Target*Lead* is put into the regressions with dependent variable being the same as in Table 3 (i.e., *CAR*). The results are presented in Table 4. If the conflict of interests related to investment banking dominates or it destroys the value of the analyst research, the negative and significant effect of the interaction term on *CAR* is expected. However, in both models of Table 4, neither of the

[4] There are 15 target prices with analyst names not available and hence the status of CFA designation.

coefficients on *Target*Lead* is significant, suggesting the market does not discount analyst coverage issued by lead underwriters. In unreported results, other interaction terms (e.g., *Target*Aff, Target*Non-IB*) are thrown into the regressions and there are no significant effects either.

To summarize main results, analysts with lead underwriters issue more optimistic target prices. However, there is no evidence that analyst coverage issued by analysts affiliated with lead underwriters or investment banks is discounted by the market.

CONCLUSIONS AND DISCUSSIONS

In this study, target prices as proxy for analyst coverage are investigated. With hand-collected data following the IPO of Facebook for the sample period of May 2012 to April 2013, it is found that analysts affiliated with the lead underwriters provide more optimistic coverage. However, there is no evidence that the market discounts the coverage issued by analysts affiliated with lead underwriters. One has to be careful when interpreting the results because of the nature of the case study and the limited availability of the data for further identification of the reasons underlying the optimism of the analysts with lead underwriters. One explanation for the favorite analyst coverage by lead underwriters could be the conflict of interests related to the underwriting deal. However, one cannot rule out another explanation. That is, analysts affiliated with those big investment banks in this IPO case could have different perspectives regarding the firm value because of their possession of superior resources and capability and/or their different analysis horizon. The fact that market reaction does not discount the target prices issued by lead underwriters is consistent with this explanation.

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APPENDIX

Variable definition

Target: The ratio of target price issued by financial analysts over the close price of Facebook on the day before the target price is announced.
Day: Number of calendar days from the IPO to when a target price is issued.
Quiet: Dummy variable, equal to 1 if a target price is issued right after the quiet period (i.e., day 40 to day 45), 0 otherwise.
Lead: Dummy variable, equal to 1 if a target price is issued by an investment bank that is one of the IPO leading underwriters; 0 otherwise.
Aff: Dummy variable, equal to 1 if a target price is issued by an analyst from an investment bank in the IPO underwriting team; 0 otherwise.
Non-IB: Dummy variable, equal to 1 if a recommendation is issued by an analyst from an institution that has no investment banking business; 0 otherwise.
Rank: Carter-Manaster (1990) rank as a proxy for the reputation of the investment bank.
CERTIFED: Dummy variable, equal to 1 if a target price is issued by a financial analyst with CFA designation, 0 otherwise.
CAR: Cumulative abnormal return upon the announcement of analyst research. It is defined as $(1+Ret_{fb,-1}-Ret_{m,-1})*(1+Ret_{fb,0}-Ret_{m,0})-1$, where $Ret_{fb,-1}$ and $Ret_{m,-1}$ is the return of Facebook and NASDAQ index, respectively, on day -1(i.e., the day before the target price announcement), where $Ret_{fb,0}$ and $Ret_{m,0}$ is the return of Facebook and NASDAQ index, respectively, on day 0 (i.e., the target price announcement day).

Table 1: Descriptive Statistics

Variable	N	Mean	Std Dev	Median
Target	117	1.2672	0.2872	1.2292
Day	117	157.6752	95.7026	159.0000
Quiet	117	0.1111	0.3156	0.0000
Lead	117	0.1111	0.3156	0.0000
Aff	117	0.2906	0.4560	0.0000
Non-IB	117	0.2222	0.4175	0.0000
Rank	91	2.6435	7.8569	7.0000
CERTIFED	102	0.2157	0.4133	0.0000
CAR	117	-0.0083	0.0738	-0.0100

Table 2: Regression results
This table presents ordinary least square regression results for target price issued by financial analysts. *p*-value is based on two-tailed *t*-test. For the purpose of brevity, the intercept is not reported.

Variables	Model 1		Model 2	
	Coeff.	*p*-value	Coeff.	*p*-value
Day	-0.0004	0.1418	-0.0007	0.0198
Quiet	-0.2960	0.0024	-0.3648	<.0001
Lead	0.1951	0.0475	0.1652	0.0505
Aff	-0.0364	0.6074	-0.0560	0.3748
Non-IB			-0.2135	0.0844
Rank			0.0052	0.1570
CERTIFED			-0.0007	0.9905
N	117		90	
Adj.R^2	.087		.197	

Table 3: Regression results
This table presents ordinary least square regression results for market reactions to target price issued by financial analysts. *p*-value is based on two-tailed *t*-test. For the purpose of brevity, the intercept is not reported.

Variables	Model 1		Model 2	
	Coeff.	*p*-value	Coeff.	*p*-value
Target	0.1219	<.0001	0.1432	<.0001
Day	0.0002	0.0349	0.0002	0.0263
Quiet	0.0051	0.8285	0.0190	0.5223
Lead	-0.0128	0.5893	-0.0196	0.4554
Aff	-0.0003	0.9871	0.0055	0.7740
Non-IB			0.0186	0.6235
Rank			-0.0006	0.5714
CERTIFED			0.0200	0.2876
N	117		90	
Adj.R^2	.216		.173	

Table 4: Regression results with interaction effect
This table presents ordinary least square regression results for market reactions after including interaction effect of target price with a dummy variable for lead underwriters. *p*-value is based on two-tailed *t*-test. For the purpose of brevity, the intercept is not reported.

Variables	Model 1		Model 2	
	Coeff.	*p*-value	Coeff.	*p*-value
Target	0.1207	<.0001	0.1439	0.0001
*Target*Lead*	0.0174	0.8260	-0.0057	0.9475
Day	0.0002	0.0347	0.0002	0.0285
Quiet	0.0061	0.8023	0.0187	0.5346
Lead	-0.0365	0.7413	-0.0119	0.9199
Aff	-0.0006	0.9710	0.0057	0.7707
Non-IB			0.0188	0.6230
Rank			-0.0006	0.5756
CERTIFED			0.0202	0.2912
N		117		90
Adj.R^2		.209		.163