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Discussion of “Analyst stock ownership and stock recommendations”

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Abstract

Chan, Lin, Yu and Zhao (2018) provide the first large scale study of sell-side analysts owning firms for which they also provide research coverage. Consistent with signaling credibility, they find analysts with ownership positions allocate more effort to these firms and the informativeness of their recommendations are enhanced. However, consistent with analyst conflicts, they find analysts that own the stock issue more optimistic target prices and frequently trade against their outstanding recommendations (which is prohibited). In this discussion, I review the evidence and point out the study's limitations. Despite its shortcomings, this paper should renew attention on analyst ownership particularly because it has potentially important policy implications. I pose several questions that may be potentially interesting to guide future research.

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1. Introduction

Should analysts be allowed to own stock in the firms they provide research coverage for? If so, what disclosure(s), if any, should be required of analysts to convey to market participants their ownership stake? The answers to these questions can have very important policy implications, but this topic has been largely ignored by researchers. Chan, Lin, Yu and Zhao (2018) (CLYZ) provide the first large scale empirical study that attempts to address some of these key issues.¹

After the ‘bubble’ burst in 2000, regulators targeted sell-side analysts for potentially misleading investors for issuing overly optimistic research. The major issue at hand focused on conflicts of interest that exist from the perspective of the analyst’s employer—that analysts issue rosy recommendations to please their investment banking clients to generate deal flow at the expense of investors that follow their recommendations. These inquiries ultimately led to the Global Research Settlement in 2003, which included the largest monetary fine on Wall Street along with other structural reforms that were primarily directed at mitigating analyst conflicts stemming from corporate finance activity. Not surprisingly, this topic has generated tremendous attention in the popular press and academic literature. What is surprising is that the issue of analyst ownership has not attracted similar attention.² Schack (2001) sums this issue up nicely: “Wall Street research analysts increasingly are accused of ditching their objectivity to please underwriting clients....But largely overlooked in all of the complaints has been perhaps the most fundamental conflict of interest of all for Wall Street analysts, owning the stocks of companies they cover.”

Even before the Global Research Settlement was finalized, in May 2002 NASD Rule 2711 and

¹ There are a few papers that focus on analysts owning stock in the firms they cover. Johnson (2013) examines voluntary analyst ownership disclosures before they were mandated, but is limited by a small sample size. Taha and Petrocelli (2014) conduct experiments and find that investors view analyst ownership negatively. Finally, Marley, Mellon and Robinson (2017) also conduct experiments, but vary the amount of information in analyst ownership disclosures. They show that investors find incremental disclosure useful.

² I refer to analysts owning securities in the firm they cover as analyst ownership henceforth.

NYSE Rule 472 was approved (superseded by FINRA 2241), which among other things, mandates analyst disclosure on which they provide research coverage and have a financial interest (either directly or through a related household member). Researchers are often drawn to studying the efficacy of major financial regulations and policy changes, which typically require several years lag as the researcher must observe sufficient post-regulatory data (plus sufficient time to execute). In the case of analyst ownership however, data availability is an unlikely explanation for the paucity of research on this topic—this study could have been executed perhaps as early as a decade ago. The arduous task of collection very well could have deterred others. Disclosures must be pulled directly from analyst reports, are not standardized across brokers, and thus manual verification of ownership positions must be performed by reading thousands upon thousands of analyst reports. The authors should be commended for the countless hours they spent putting the sample together and ensuring its accuracy. Perhaps another reason why academicians have ignored this idea is the preconceived view, like mine, several of my colleagues and sell-side analysts that I have spoken with, that analyst ownership, if it does exist, is extremely rare. Yet, CLYZ show this is not the case at all—analyst ownership is pervasive. Approximately 13% of analysts own stock in at least one of their covered firms and 80% of sample brokers allow this practice.

In addition to the surprising result regarding the sheer number of analysts that have ownership stakes in the companies they cover, the authors offer a number of other interesting results. They find that disclosure of analyst ownership is associated with *more* informative recommendations and proxies of analyst effort. They argue that this result is consistent with the view that ownership signals credibility to market participants. However, on the other hand, they find that of the positions they can identify an initiation of a buy or a sell, the majority of analysts (55%) sell when they have a buy recommendation outstanding and 30% buy when they have a sub-buy recommendation outstanding. This is a clear violation of the regulations that prohibit analysts from trading that contradicts their recommendation. These latter findings unambiguously support the conflicts of interest view.

In this discussion I begin with how this paper fits in and contributes to the literature and review the arguments in favor of and against analyst ownership in which the main predictions are formed. Following that, I question what we can reasonably expect to infer from analyst ownership disclosures. I then review the evidence and in doing so, I point out the limitations of the study. Finally, I pose some questions that are left unaddressed, but may provide some interesting extensions for future work.

2. Contribution and arguments for and against analyst ownership

2.1 Contribution and fit to the literature

There exists a robust literature investigating the impact of bank-client relationships on analyst output. This is the first large scale study that focuses on analysts owning stocks for which they provide research coverage. While there is a clear difference between these two streams of research, the similarities are remarkable and help guide the authors to form their hypotheses and predictions. Moreover, these hypotheses, the *conflict of interest hypothesis* versus the *enhanced credibility hypothesis*, provide competing predictions that help add tension to the paper. Briefly, the *conflict of interest hypothesis* posits that analysts with ownership positions will issue overly optimistic recommendations to increase their personal wealth. On the other hand, the *enhanced credibility hypothesis* postulates that analysts owning one or more of their covered firms signals credibility because they have strong enough conviction in their recommendation to personally invest in it. I first discuss these hypotheses and then describe a few subtle differences between bank affiliation and analyst ownership in this context.

2.11 Conflict of interest hypothesis

The conflict of interest hypothesis postulates that analyst ownership creates a potential conflict because analysts have the ability to move the stock price and thus can directly impact their personal wealth. This bias could be rational in the sense that an analyst knowingly tries to increase personal

wealth through positive opinion changes. Alternatively, the bias can be behavioral in that the analyst is overconfident and emotionally invested in the company.

Like analyst ownership, bank-client relationships can also upwardly bias analysts' opinions because the analysts' bank is receiving revenue from the client and would not want to damage this relationship by releasing negative information. Thus, biased analysts will be overly optimistic, but the market should discount this bias. Evidence in favor of this hypothesis goes back at least to Dugar and Nathan (1995), Lin and McNichols (1998) and Michaely and Womack (1999). These studies tend to compare either the earnings forecasts or recommendations of analysts affiliated with banks that did equity offerings (initial public offerings or seasoned equity offerings where the affiliated bank recently received hefty investment banking fees) to analysts employed by banks that did not. Many others papers followed (i.e., Dechow, Hutton and Sloan, 2000; Bradley, Jordan, and Ritter, 2003; O'Brian, McNichols and Lin, 2005; among many others) including in other non-equity contexts such as M&A and debt issuance (Kolanski and Kothari, 2008; De Franco et al., 2013; etc.). Some papers even argued that analysts' conflicts didn't stop at keeping its existing clients happy, but also extended to attracting future investment banking deal flow from non-clients as the importance of research coverage to firms increased through time (Loughran and Ritter, 2004; Ljungvist, Marston and Wilhelm, 2006). In fact, during the 'bubble period' of 1999-2000, Bradley, Jordan and Ritter (2008) argue that no discernable differences between affiliated and unaffiliated analysts could be observed because unaffiliated analysts were just as conflicted as affiliated analysts in trying to curry favor to management to land banking mandates.

The arguments against analyst ownership because of conflicts appear obvious. And even if an analyst has innocuous intentions, there is still a *perception* of conflict. In my conversation with a 15-year sell-side analyst veteran, he indicated "I do not own any companies I follow....and I never have."³ Note that several brokers banned analyst ownership pre-disclosure regulations fearing that allowing it would

³ He further went on to say that to his knowledge his broker does not allow analyst ownership, but he has never formally inquired because he would never put himself in that situation.

jeopardize their reputation (Schack, 2001). Further, as Table 1 indicates, there has been a downward trend in analyst ownership (columns 7 and 8) suggesting that the practice, while still significant, is less prevalent than it once was.⁴

2.12 *Enhanced credibility*

The enhanced credibility hypothesis offers the opposite prediction. By having ‘skin in the game’ analysts’ recommendations should convey credibility to market participants ‘by signaling analysts’ superior information.’ Thus, it predicts a positive association between analyst ownership and the market reaction to this signal released in their recommendation reports. In the context of banking, Allen and Faulhaber (1989) present a model that suggests when firms go public, underwriters possess informational advantages, which should spillover to analysts during the book-building process. While evidence in favor of superior information is difficult to find in the context of equity or M&A banking affiliations, Chen and Martin (2009) find that analysts working for banks that recently provide private lending to firms generate private information from these activities. Irvine, Simko and Nathan (2004) study the link between analysts’ earnings forecasts and their asset management operations. They find a positive relation between forecast accuracy and the firm’s ownership concentration in the funds they manage.

There are two main arguments provided by CLYZ as to why analyst ownership may enhance their objectivity and credibility of their recommendations. The first is that when analysts ‘put their money where their mouth is,’ this sends a signal that analysts are convinced about the future prospects of the firm. As they note from Schack (2001) citing a practitioner, ‘if you’re going to recommend it for your clients, then why on earth don’t you own it yourself?’ At first blush, this “skin in the game” argument seems like a reasonable explanation for allowing analyst ownership. But, an interesting

⁴ In 2003, 15.7% of sample analysts owned at least one firm they covered. By 2012, this number dropped to 10.1%. In their final draft, they report that 12% of analysts own stock in 2016. Thus, while still a reduction from 2003 levels, the trend is not monotonically downwards.

question that should be considered is the signal this might send relative to the analysts' overall coverage portfolio. Conditional on analyst ownership, the average analyst owns less than 20% of their coverage portfolio yet more than 40% has the analysts' highest rating (Table 1). What signal does ownership send about the rest of the analysts' coverage portfolio that they do not own, but also have their highest rating? Does this really mean 'buy' for these positions, but 'hold' for the remaining non-ownership buy positions? In the context of banking affiliation bias, this argument is akin to Malmendier and Shanthikumar's (2007) findings that large traders adjust their trading response downwards for affiliated analysts' buy ratings, consistent with the view that they interpret affiliated analyst 'buy' ratings as 'holds.'⁵ Following this logic, the informativeness of within-analyst recommendations may not convey credibility per se, but rather non-ownership portfolio firms are discounted relative to ownership recommendations.

The second point that proponents argue for allowing ownership is diversification. That is, analysts should be allowed to invest in their covered companies to diversify their own portfolio. As the authors suggest, analyst ownership for diversification reasons would not send an information-based signal. Nonetheless, diversification as an argument for ownership seems unsatisfactory. The average analyst covers less than 20 firms mostly in a single or few industries (Harford et al., 2018). Are there not sufficient investment vehicles for an analyst to diversify their holdings than investing in a few of their industry concentrated firms?

2.2 How does analyst ownership differ from banking affiliation?

Although the predictions between analyst ownership and banking are indeed similar, several subtle differences are worth discussing. First, with respect to the enhanced credibility hypothesis, unlike in the context of banking affiliation where the source of superior information is well identified

⁵ However, they find that small traders (retail investors) take the recommendations at face value.

(i.e., from the banking relationship), it is not clear where the source of the analysts' information originates. This is not a major issue for the predictions per se, but it does make one wonder if the source of information alters the signal that may come from analyst ownership. For instance, some analysts have better management access (several documented channels are identified in the literature) or it may be entirely driven by analysts' information production through allocating more effort to these firms (Harford et al., 2018).⁶ Alternatively, could it be that some analysts may even be motivated to own their covered firm from superior information generated from investment banking? The source of the information channel will likely impact the signal and therefore the market reaction to the recommendation release.

It should also be noted that there is a difference in predictions regarding analyst optimism stemming from banking conflicts versus analyst ownership. A priori, one would expect that analysts would be more likely to buy firms they are optimistic about. However, a priori, it is not the case that one would expect analysts to be overoptimistic about their banking clients. It is well established that if anything, evidence leans more towards firms underperforming following equity offerings or M&A deals (Ritter, 1991; Speiss and Afflac-Graves, 1995; Agrawal, Jaffe and Mandelker, 1992; etc.). The authors show univariate statistics that analyst ownership positions are rated more favorably. In subsequent tests they perform analyses on target prices and show analyst ownership positions are indeed more optimistic. However, it is difficult to tease out evidence of analysts conflicts versus enhanced credibility based on optimism alone. In this isolated context, they are not mutually exclusive. Later I discuss these results when coupled with the evidence on earnings forecast optimism.

Finally, while the Global Settlement and related regulations leading up to it required banks to disclose banking conflicts in detail along with analyst ownership positions, it should be noted that banking affiliations could be identified well before these mandates required disclosure in analyst

⁶ CLYZ find analysts with ownership allocate more effort to these firms compared with their non-ownership firms and argue this is one plausible channel supporting the enhanced credibility explanation.

reports. With minimal effort, one could examine required SEC filings of corporate finance activity and determine brokers participating in deals. Researchers use this approach to identify affiliated banks (and their analysts) pre-regulatory changes requiring explicit disclosure. Further, several studies examine the effectiveness of the Global Settlement on affiliation bias by comparing optimism and informativeness of research output pre- and post-regulation changes (i.e., Kadan, Madureira, Wang, and Zach, 2009; Corwin, Larocque, and Stegemoller, 2017). Unfortunately, no similar method can be used to extract analyst ownership positions pre-disclosure requirements. Thus, while regulatory reforms also require disclosure of banking clients in analyst reports, it could be argued that explicit disclosure of banking affiliations is a non-event (particularly to institutional clients). On the other hand, unless analysts privately signaled their ownership in firms voluntarily, this disclosure may reveal new information.

3. What can we infer from analyst ownership disclosure and the evidence presented?

While I believe that disclosure of analyst ownership is indeed useful, I am less confident in what we actually can infer from it based on the lax disclosure requirements. As I review the evidence, I offer an alternative interpretation from the one presented in the paper. Ultimately, I argue that the results paint a picture that analyst ownership is much more closely aligned with analyst conflicts than credibility despite the mixed evidence.

3.1 What does ownership disclosure signal?

Before getting to the results, it is important to discuss what we can reasonably expect to infer from analyst ownership disclosure. Disclosure should provide information to market participants, but in its current form, I argue that the signal is weak. As noted earlier, there are no standardized disclosure policies across brokers and almost all just disclose whether an analyst (or related household member) has a financial interest in a firm she covers. Such a simple binary yes/no reveals *some* information, but it is

insufficient to relay a strong credible signal for several reasons.

First, we have no idea the size of the analyst's financial stake invested in the covered firm.⁷ Note that mutual fund managers must even disclose a range (i.e., \$0-10,000; \$10,001-50,000, etc.) of their personal invested fund ownership (Khorana, Servaes, Wedge, 2007).⁸ Yet, the ability of sell-side analysts to move individual stock prices is potentially much greater (as is the potential conflict) than that of a fund manager. Clearly, the size of analysts' positions is important information as the signal would naturally be positively related to the size of the ownership stake. Further, suppose that the analyst took a large ownership position in a firm, but subsequently sells all but a few shares by the time her next report was issued. Like the revelation of the initial buy signaling information, the revelation of selling most of the position would also signal information. However, we observe the *same* exact ownership disclosure in the sequential analyst report. That is, we never observe this selling signal because of the binary nature of ownership disclosure. Second, we must infer *who* has an ownership stake in the firm. It could be the analyst, analyst's team member, or a family member that resides in the analyst's home (wife, parent, sibling, grandparent, etc.).

In addition to the invested amount, the analyst's purchase price also should impact the precision of the information signal. However, we also have no way to determine the analyst's transaction price (and analysts' own performance relative to their recommendation) because we only observe ownership in analysts' published reports that are updated rather infrequently. For instance, suppose an analyst issues a non-ownership report on January 1, but in the very next report released on April 1, an ownership position is disclosed. The position was therefore initiated sometime between these two reports and we can only infer the purchase price based on the stock's trading range between these reports.

⁷ The author's note that only 1 broker voluntarily provides this information.

⁸ The SEC required mutual fund managers to disclose their ownership in their fund beginning in 2005 following late trading scandals. Khorana, Servaes, and Wedge (2007) find that ownership is positively related to risk-adjusted performance and conclude that disclosure is useful to investors.

Ideally, analyst ownership disclosures would be standardized and include who owns, how much, price paid and time-stamped. Unfortunately, for the authors, this is not possible to observe. However, there may be some possible ways to extract more information from the ownership signal. In their analyses of analysts' trading behaviors, CLYZ examine plausible reasons for violations of analyst trading against their recommendations. They randomly select 50 reports and find that 12 of these 50 reports specify the name of the analyst (the remaining do not specify). While not examined in the paper, if we assume approximately the same rate 25% (12/50) of analyst ownership disclosures specify who owns the stock, it should be the case that for these subset of reports, it contains a stronger signal because it is the analyst's reputation on the line (as opposed to having to guess whether the disclosure was forced because a household member or analyst team member owned the stock). Next, compliance procedures vary across brokers (Schack, 2001) and may explain why, conditional on allowing analyst ownership, it is more pervasive at some brokers than others. Thus, at brokers where analyst ownership is rare, an ownership position likely sends a stronger signal than at one where it is common practice. Analysts must weigh the effort and difficulty of compliance versus the conviction in their private information. Likewise, one may be able to capture a stronger signal by computing the percentage of analyst *i*'s ownership in their covered firms. Similar to broker-level variation, analyst-level ownership across their portfolio of coverage firms may reveal important information about the ownership signal. Finally, the length of ownership may also impact the signal, which cannot be precisely identified, but approximated through analysts' strings of reports. All of these analyses can be tested with the information available to market participants and may help extract more information contained in the ownership signal.

3.2 The evidence in favor of enhanced credibility

CLYZ present several main findings. These include analyst ownership is 1) positively related to initial market reactions of analysts' recommendations (but not longer-term drift); 2) positively related

to analyst effort; 3) positively (negatively) related to target price optimism (accuracy), but similar earnings forecast optimism/accuracy. Finally, they find 4) evidence of analysts trading against their recommendations, a clear violation of regulations that prohibit this behavior.

The authors argue that #1 and #2 support the view that ‘analysts’ stock ownership enhances the credibility of their recommendations by conveying their superior information to market participants whereas #3 and #4 are consistent with analyst bias. Despite the evenly mixed findings, in my view, the evidence leans heavily towards analyst bias as I will explain.

The main evidence in favor of the enhanced credibility hypothesis comes from a regression analyzing the initial market reaction to buy recommendations. Economically, the results imply that analyst ownership recommendations are greeted with 1.2% higher market reactions (Table 4, model 2). This falls to 0.7% when potentially confounded events are excluded (model 3). To put this in perspective, compare this to the unconditional market return to new initiations of coverage and recommendation changes—Irvine (2003) finds the average abnormal return to new initiations of analyst coverage is about 1.0% and Bradley et al. (2014) find the average recommendation revision to buy is about 2%.⁹ While the magnitude of the coefficient dropped significantly from the conference version of the paper (model 3 cut in half) the economic magnitude is still large.¹⁰ I find this difficult to reconcile given the weak signal that investors must infer from lax disclosure. Is there a reasonable alternative explanation for these results?

3.3 *A plausible alternative explanation?*

Brav and Lehavy (2003) find that abnormal returns are increasing with target price optimism.

⁹ Note that both initiations and revision recommendations are pooled in their models. If analysts are more likely to disclose an ownership position when they upgrade to buy as opposed to when they first initiate coverage, this could drive the positive relation found in Table 3.

¹⁰ Further, note that in the conference version of the paper, the investment value of recommendations was economically small, but statistically significant providing more support for the enhanced credibility hypothesis. In this version, it is no longer significant.

The authors find that analyst ownership is positively associated with target price optimism. Is the observed positive loading on analyst ownership in the market reaction regressions simply driven by the fact that analyst ownership target prices are higher causing higher market reactions? To their credit, in the post-conference version of their paper they note that in untabulated results they reexamine their market return results allowing the target price forecast to vary with analyst ownership. That is, they interact their ownership dummy with the target price forecast. They find that the market discounts the target price forecast for ownership recommendations. This weakens the argument that analyst ownership signals credibility.

In other tests, the authors also find evidence of analyst effort being positively related to analyst ownership and bundle this as evidence supportive of enhanced credibility.¹¹ They argue that ownership motivates analysts to work harder and generate more private information. Alternatively, could ownership motivate analysts to issue more reports, with more optimistic price targets, knowing that these reports will likely bump the price? One might argue that if this were the case, analyst earnings forecasts would also be upwardly biased. But, CLYZ find no evidence of earnings forecast optimism (nor do they find evidence of earnings forecast accuracy, which would imply superior information). However, Malmendier and Shanthikumar (2014) argue that analysts with nonstrategic motives issue both optimistic forecasts and recommendations, but strategic biased analysts issue optimistic recommendations and *pessimistic* earnings forecasts. They argue that strategic analysts have incentives to be pessimistic on earnings forecasts so that management can beat the consensus estimate. In this framework, if analysts with ownership were truly nonstrategic, their earnings forecasts would also be significantly more optimistic like their other measures of output.

¹¹ They use two proxies consistent with the literature: the frequency of earnings forecasts and the timeliness of analysts' forecasts (the first mover, or first analyst to issue their annual forecast).

3.22 *The evidence in favor of conflict of interest*

While CLYZ put target price optimism in the conflict of interest camp, as I argued previously, it is difficult to side with analyst conflicts in the case of optimism alone because we expect analysts to own firms they are optimistic about. What we should not expect, and what they are explicitly prohibited from doing, is trading against their own recommendations. Yet, CLYZ find systematic evidence that analysts often engage in this activity. In my view, this is the most interesting, controversial, and convincing evidence in the study.

To determine analysts' trading behavior, sequential analyst reports must be evaluated to determine when a buy or sell took place. Initiations simply represent the first report in a string of sequential reports where an ownership disclosure is found. Subsequent reports are tracked until a non-ownership is issued identifying termination. For cases where they can identify an initiation and/or termination, they find that approximately 30% of analysts initiate ownership when they had below a buy rating outstanding and more than 50% sell when they had a buy rating outstanding. Thus, many analysts are clearly in violation of NASD Rule 2711/NYSE Rule 472 that explicitly ban this activity. Are there other rational explanations for these blatant violations? A few possible explanations are discussed, but the authors do a nice job in ruling these out. Per the regulations, analysts can sell for 'unanticipated financial hardships,' but that could not explain the buying behavior and it is unlikely that hundreds of analysts sell their holdings because they face financial hardship. The only other plausible explanation seems to be that the authors are missing a report in the sequence and on I/B/E/S, but I find that unlikely.¹²

Overall, when considering the evidence in its entirety, I believe it weighs significantly more on the side of analyst conflicts than credibility. The arguments for analyst ownership are unsatisfactory, the

¹² They do consider that analysts may change their recommendations without issuing a report by searching on I/B/E/S for recommendation changes, but do not find any such instances.

evidence in favor of analyst ownership relies on one main result that is on shaky ground whereas the one result that favors analyst conflicts is solid. Further, this latter evidence (that so many analysts trade against their own recommendations) does not rely on econometric models that may be incorrectly specified or spurious. These results are purely descriptive, but should be of great interest to regulators and perhaps will renew dialogue on this subject. It also brings up several interesting unanswered questions. Are brokers monitoring the ownership of their analysts? Where are the regulators in enforcing these seemingly obvious and frequent violations?¹³

Taking the evidence on the whole, I believe it suggests that enforcement of regulations pertaining to analyst ownership is weak and that either significantly more disclosure is required (along with stronger enforcement) or stock ownership should be outright banned.

4. Some questions for potential future research

CLYZ address the first natural question pertaining to analyst ownership disclosure—how does it affect their output and how does the market perceive it? In this section I pose some unanswered questions that may be of interest for future research.

As noted earlier, the Global Research Settlement and related reforms were instituted to sever the link between investment banking and analysts including, but not limited to, making it unlawful to directly tie analyst compensation to investment banking business. Thus, while the incentives to curry favor to management to win banking mandates may have been mitigated, as one Director of Research told me, they (research department) still support corporate finance and trading (which are much more profitable).¹⁴ Further, in conversations with a CFO of a publicly-traded firm with analyst coverage, he

¹³ To be fair, there here have been close to 30 cases where fines and suspensions were enforced by FINRA for *non-disclosure*. However, these fines tend to be small (largest \$800,000 for Morgan Stanley) and likely represent a very small fraction of violations. We have no way of identifying analysts that do not disclose their ownership positions, but this paper shows hundreds of seemingly obvious violations that can easily be identified.

¹⁴ Take the Snap IPO. Affiliated analysts are prohibited from issuing a recommendation for 25 calendar days after the IPO until the ‘quiet period’ expires. When it did, within a few days 13 of the 26 analysts employed by the underwriters involved in the deal issued their recommendations. Of the 13, 9 issued buy recommendations including the two lead underwriters.

indicated that they would never use a broker for corporate finance activity if the analyst was negative on the firm because they would not be able to sell the firm's story to institutional investors. This brings up a potentially interesting question. Do analysts' use their ownership in covered firms as a subtle way to curry favor with management to get banking business?¹⁵ Perhaps more importantly, as the business model of sell-side research changes towards more emphasis on concierge services and arranging meetings for institutional clients, do analysts use ownership to curry favor with management to get better access to management?

Pacelli (2018) finds that weak broker culture is associated with more strategically biased forecasts. To compute a broker's integrity culture, he uses non-equity research FINRA violations. In this context, it may be interesting to examine if weak brokerage culture is related to analyst front-running. I applaud the authors for taking the first step in this direction from the post-conference version of the paper by examining sanctioned banks (presumably poor culture) from the Global Settlement (GS). They find no evidence that sanctioned banks are more likely to trade against their recommendations. However, sanctions to banks in the GS were related to equity research (unlike Pacelli's non-equity measure) and are a small sample of FINRA violators. Thus, because the correlation between sanctioned GS banks and brokers' overall integrity culture does not appear to be strong, there still may be a relation between broker integrity culture and analysts that are more willing to trade against their recommendations.

Asquith, Mikhail and Au (2005) find that the content of analysts' reports contain valuable information. A potentially interesting question is whether the text of analysts' reports differ for

¹⁵ These patterns are reminiscent of the pre-Global Settlement (Bradley, Jordan and Ritter, 2003). See Huston (2017) and DiMaggio, Etsy and Saldutte (2018).

¹⁵ Note that descriptive statistics in Table 3 suggests analysts currying favor for banking business may be unlikely because only 2.9 percent of ownership reports are bank affiliated compared to 5.3 percent on non-ownership reports. However, this distribution is skewed because analysts are prohibited from investing in IPO clients, which likely represents a significant portion of non-ownership recommendations. A more appropriate comparison would be ownership versus non- ownership for only SEO (and M&A deals).

companies in which analysts have an ownership stake compared to their reports they do not. For instance, do analysts' valuation models differ to justify higher target prices in their ownership positions? The financial literature has also developed ways to extract tone using textual analysis (Loughran and McDonald, 2016). Are analyst ownership reports significantly more optimistic than non-ownership reports holding constant the optimism in their ratings and target prices?

Finally, there may be some potentially interesting cross-sectional implications of analyst ownership. For instance, Fang and Yasuda (2009) show that bank and analyst reputation have differing effects on analyst conflicts. They find that personal reputation is an effective disciplinary device, but bank reputation alone is not. Likewise, Ljungqvist et al. (2007) find that institutional investors serve a similar disciplinary role in that analysts are less likely to be biased on firms with high institutional investor ownership. These firms are highly visible and analysts rely on them for trading revenue. Thus, it might be interesting to examine the cross-sectional implications of these disciplinary mechanisms on analyst ownership.

5. Conclusion

Chan, Lin, Yu and Zhao (2018) provide the first large sample study on analysts owning stock in the firms they cover. They examine analyst output behavior (earnings, recommendations and target price forecasts) and the market consequences. They find some evidence supportive of analyst ownership signaling credibility to market participants, but also find systematic evidence of analysts front-running their recommendation changes. While this study provides a nice starting point for looking into this issue, several questions are left unanswered and more research is needed. Given the important policy implications of analyst ownership, I suspect this study will be a catalyst for more dialogue and attention from regulators and academicians.

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