Restatements for pre-IPO financial statements

Abstract

This study examines the likelihood of restatements for the financial statements disclosed before the initial public offerings (IPO) and the nature of these misstated financial statements. We find that before the IPO date, IPO firms are more likely to issue materially misstated financial statements than other public firms. Compared to the other IPO issuers, firms that restate their pre-IPO financials exhibit higher discretionary accruals and experience severe IPO underpricing. Also, the stock market reacts more negatively to the restatement announcements for pre-IPO financials than those of other public firms. Overall, our findings indicate that IPO firms are likely to issue misstated financial statements to succeed in their public debuts and equity financing.

Keywords: Initial Public Offering, Financial Reporting Quality, Restatement.
JEL number: G32, M41, M42

1. Introduction

In this paper, we examine the likelihood of restatements for the financial statements disclosed before the initial public offerings (IPO) and the nature of these misstated financial statements. A large body of IPO literature has examined financial reporting quality around initial public offerings, and significant disagreement exists as to whether earnings are inflated at the time of IPO. On the one hand, IPO firms are likely to engage in opportunistic misreporting to make their IPO succeed and maximize cash inflow from equity financing. Consistent with this motive, prior literature has been building a pile of empirical evidence on abnormal discretionary accruals of IPO firms (e.g., Teoh et al. 1998; Darrough and Rangan 2005; Katz 2009; Wongsunwai 2013; Sletten et al. 2018). On the other hand, IPO firms have incentives to keep a high quality of financial reporting. Going public increases litigation risk and invites a lot of attention from regulators and investors, which translates into additional scrutiny and regulatory oversight (e.g., Ball and Shivakumar 2008; Venkataraman et al. 2008; Ball 2013; Armstrong et al. 2016). In this line of literature, abnormal discretionary accruals around IPO are interpreted as a manifestation of normal economic activities of IPO firms, rather than the evidence of earnings management.

This study aims to shed light on this debate by documenting empirical evidence whether IPO firms are more likely to restate their financial statements disclosed before the IPO than other public firms. We examine the restatements of pre-IPO financials for two reasons. First, the use of restatements as a proxy for financial reporting quality complements the evidence from prior literature relying on discretionary accruals. As an external measure of financial reporting quality, a restatement indicates that financial statements originally issued include a misrepresentation of economic substance (DeFond and Zhang 2014). Moreover, unlike discretionary accruals, we do not need to specify a model to control for the normal level of business activities (Dechow et al.

2010). Therefore, restatements provide strong evidence of poor financial reporting quality. Second, the restatements of pre-IPO financials allow us to examine financial reporting quality *before* IPO. Prior literature, by and large, has examined the accruals in annual financial statements disclosed *after* IPO. However, evidence on discretionary accruals before IPO is mixed and not clear as on those in the year of IPO (Teoh et al. 1998; Venkataraman et al. 2008). Since underwriters and investors use financial statements available at the time of IPO to determine their participation in IPO, the financial statements *before* IPO are more relevant to address our research question whether firms misstate their financial statements to succeed in IPO.

We begin by investigating the likelihood of restatements for the financial statements disclosed before IPO. Since the fundamental firm characteristics of newly public companies are different from their publicly traded counterparts, we perform the propensity score matching (PSM) to control for the confounding effects of IPO firm characteristics. Using the matched sample of 1,100 pre-IPO firm-years and 1,100 publicly listed firm-years from 2002 to 2016, we find that IPO firms are more likely to restate their pre-IPO financial statements than matched control firms. Our results are robust to excluding income-increasing restatements, mitigating the concern that our restatement variable captures instances of mere reporting errors.[1] Overall, these findings indicate that IPO firms are more likely to issue misstated financial statements before IPO to succeed in their public debuts.

Our interpretation is consistent with stronger incentives to manage earnings at the time of IPO. However, an alternative explanation stems from higher litigation risk and regulatory pressure around IPO, which lead to intense monitoring by the various parties that are involved in the IPO process (e.g., venture capitalists, underwriters, auditors, regulators). One can argue that intense

[1] In an untabulated test, we find similar results when we exclude restatements due to clerical errors.

monitoring is associated with a higher detection probability of misreporting in financial statements, and thus, IPO firms may end up restating their pre-IPO financials more than their public counterparts even though their financial reporting quality is not significantly different. To rule out this alternative explanation, we examine whether restatements are associated with the other indications of lower financial reporting quality. We use three different settings throughout the IPO process–the level of discretionary accruals in the financial statements disclosed *before* IPO, the first day returns *on* the IPO date, and the announcement returns of restatements *after* IPO.

First, we examine whether IPO firms that restate their pre-IPO financials exhibit higher discretionary accruals in the financial statements disclosed *before* IPO. If IPO firms aggressively report their financial information and subsequently restate their financial statements, pre-IPO financials of these firms will show a higher level of discretionary accruals. In contrast, we would not find a significant difference in the level of discretionary accruals if the higher detection probability of immaterial errors results in a higher likelihood of restatements. Among IPO firms, we find that discretionary accruals in pre-IPO financials are higher for firms that restate their financial statements. The evidence complements higher discretionary accruals of IPO firms documented in prior literature and suggests that restatements of pre-IPO financials indicate the lower financial reporting quality of IPO firms.

Second, we examine whether IPO firms that restate their pre-IPO financials experience more severe IPO underpricing *on* the first day of public trade. Ritter and Welch (2002) define IPO underpricing as the offer price of IPO shares is lower than the closing price of the shares on the first day of the IPO. Finance literature typically attributes IPO underpricing to the information asymmetry among less informed new investors and better-informed pre-IPO shareholders (e.g., Rock 1986; Boone et al. 2016). The degree of information asymmetry among market participants,

however, can be mitigated by better financial reporting quality (e.g., Wittenberg-Moerman 2008; Ramalingegowda et al. 2013). As such, we argue that misstatements of pre-IPO financials are likely to increase the information asymmetry among IPO market participants, which leads to an increase in underpricing. Among IPO firms, we find underpricing is more severe for firms that subsequently restate their pre-IPO financials, consistent with the lower financial reporting quality of IPO firms.

Finally, we examine whether IPO firms that restate their pre-IPO financials encounter more negative stock market reactions when they announce such restatements *after* IPO (e.g., Hennes et al. 2008; Bens et al. 2012). If IPO firms intentionally misreport their pre-IPO financials to mislead investors to participate in IPO, the revelation of such restatements is more surprising to the stock market. Accordingly, we expect announcement returns to be more negative for restatements of pre-IPO financials than for those of their public counterparts. Using the matched sample of restatement announcements for 95 pre-IPO financials of IPO firms and 95 financials of public firms, we find that restatement announcement returns are more negative for pre-IPO financials. Collectively, our findings indicate that IPO firms issue misstated financial statements that translate into lower financial reporting quality to succeed in their public debuts and equity financing.

Our paper makes several contributions to prior literature. First, this study adds to the literature on financial reporting quality around equity issues (e.g., Teoh et al. 1998; DuCharme et al. 2004; Lee and Masulis 2009; Cohen and Zarowin 2010; Kothari et al. 2016; Basu et al. 2018). Consistent with prior literature, we document that firms misstate their financial statements before they secure funding in the public equity market. The misstatements exacerbate information asymmetry between informed and uninformed investors and incur real costs, as is evidenced by IPO underpricing and restatement announcement returns.

More specifically, this study sheds light on the debate about earnings management around IPO (e.g., Teoh et al. 1998; Darrough and Rangan 2005; Katz 2009; Cecchini et al. 2012; Wongsunwai 2013; Armstrong et al. 2016; Fedyk et al. 2017; Sletten et al. 2018). While prior literature has consensus that IPO firms have higher discretionary accruals at the year of IPO, there is mixed evidence whether they have abnormally high discretionary accruals *before* IPO (Ball and Shivakumar 2008; Venkataraman et al. 2008; Sletten et al. 2018). We fill this gap in the literature by providing empirical evidence about the likelihood of restatements of pre-IPO financials. We find IPO firms are more likely to restate their pre-IPO financials, consistent with the notion that firms manage their earnings to succeed in IPO.

Finally, this study contributes to the literature on accounting restatements (e.g., Hennes et al. 2008; Bens et al. 2012; Francis and Michas 2013; Eshleman and Guo 2014; Hennes et al. 2014). Our findings highlight that accounting restatements can be used as an effective alternative measure of financial reporting quality, especially when discretionary accruals are less credible (Ball and Shivakumar 2008; Dechow et al. 2010; Ball 2013).

The remainder of this study is organized as follows. We review related literature and develop the hypothesis in Section 2. Section 3 provides the research design, and Section 4 describes sample selection procedures and descriptive statistics. Section 5 presents the empirical results. Section 6 concludes the paper.

2. Prior literature and hypothesis development

Prior accounting literature suggests that substantial earnings management occurs before IPO (Aharony et al. 1993; Friedlan 1994; Teoh et al. 1998a; Teoh et al. 1998b; Morsfield and Tan 2006; Wongsunwai 2013; Sletten et al. 2018). The incentive to overstate earnings is greater for managers of IPO firms because higher reported earnings help them have a successful debut in the

public equity market. Moreover, the relatively higher degree of information asymmetry between managers and potential investors creates an opportunity for managers to inflate earnings. As such, a large body of literature documents that IPO firms tend to exhibit abnormally high accruals, and interpret it as the evidence of opportunistic misreporting. For example, Teoh et al. (1998) find the higher discretionary accruals in the year firms going public, link these accruals to long-run underperformance, and interpret their findings as evidence of earnings management to inflate the issue price. Subsequent studies confirm that accruals are abnormally high in the IPO year and attribute these accruals to managers' incentives to inflate earnings before stock issues (e.g., DuCharme et al. 2004).

Although the above arguments are intuitively appealing, another stream of literature provides some reasons that IPO firms might not inflate their earnings. Newly public companies face increased litigation risk and heightened scrutiny relative to their more mature, publicly-traded counterparts (e.g., Lowry and Shu 2002; DuCharme et al. 2004; Billings and Lewis-Western 2016). The increase in litigation risk is largely due to the Securities Act of 1933 that shift the burden of proof and increase the maximum legal liability for misreporting in connection with IPO. [2] There is also intense monitoring by the various parties that are involved in the IPO process (e.g., venture capitalists, underwriters, auditors, and regulators). For example, Venkataraman et al. (2008) find that both audit quality and audit fees are higher for IPO firms because auditors have incentives to reduce their litigation exposure. Consistent with this line of literature, Ball and Shivakumar (2008) show that pre-IPO and IPO accruals are more conditionally conservative. Cecchini et al. (2012)

[2] IPO firms have the higher litigation risk and legal liability because the false or misleading statements contained in the registration statement filing are covered under the more legally onerous Section 11 of the Securities Exchange Act of 1933. Under Section 11, investors do not have to prove that they relied on false or misleading statements or that critical information was omitted from the registration statement. Instead, the burden of proof is on the firm, and damages under Section 11 are based on the lower of the IPO offer price and the investors' purchase price. As a result, newly public companies arguably face heightened litigation and regulatory risk from inflated earnings.

find that newly public companies tend to report an allowance for doubtful accounts that is more conservative than that of more mature companies. Therefore, despite the unique opportunities and purported incentives for earnings management, it is difficult to conclude that firms manage earnings before IPO.

One limitation of literature supporting earnings management before IPO is that the evidence of opportunistic misreporting is based entirely on the magnitude of abnormal accruals. In particular, the estimation of discretionary accruals depends on the assumption for the level of normal business activities, i.e., the normal level of accruals. However, it is difficult to estimate the normal level of accruals for IPO firms without noise because they experience a drastic change in their business environment. Specifically, firms going public are likely to invest heavily in growth and tend to have distinct characteristics from their more mature public counterparts. For example, Armstrong et al. (2016) provide evidence that the higher discretionary accruals of IPO firms are likely to be associated with normal business activities rather than aggressive financial reporting.

In this study, instead of relying on the level of discretionary accruals, we examine whether IPO firms are more likely to restate their financial statements disclosed before IPO than their public counterparts. There are two advantages to examine the restatements of pre-IPO financials. First, the use of restatements as a proxy for financial reporting quality complements the evidence from prior literature relying on discretionary accruals. As an external measure of financial reporting quality, a restatement indicates that originally issued financial statements include a misrepresentation of economic substance (DeFond and Zhang 2014). Because restatements are defined as a misapplication of Generally Accepted Accounting Principles (GAAP), they do not simply measure an optimistic estimate, but rather a violation of GAAP. Moreover, unlike discretionary accruals, we do not need to specify a model to control for the normal level of business

activities (Dechow et al. 2010). Therefore, restatements provide strong evidence of poor financial reporting quality.

Second, the restatements of pre-IPO financials allow us to examine financial reporting quality *before* IPO. Due to data availability, most of the prior studies focus on discretionary accruals at the IPO year, which are available *after* IPO. However, empirical evidence on discretionary accruals before IPO is mixed and not clear as on those in the year of IPO. For example, in the pre-IPO period, Aharony et al. (1993) and Ball and Shivakumar (2008) find that discretionary accruals are insignificant; Friedlan (1994) and Teoh et al. (1998) find that discretionary accruals are income-increasing; Venkataraman et al. (2008) find that discretionary accruals are income- decreasing. This timing issue is not trivial since underwriters and investors are likely to use financial statements available at the time of IPO to determine their participation in IPO. As such, IPO firms face stronger incentives and opportunities to misstate their financial statements *before* IPO. For these reasons, the use of restatements can complement the evidence relying on discretionary accruals and contribute to the debate about earnings management of IPO firms.

Following prior literature supporting earnings management of IPO firms, we hypothesize that IPO firms are more likely to restate their financial statements than their public counterparts. As explained, our focus is on whether firms restate financial statements disclosed before the IPO dates to make sure that the underwriter and investors rely on misstated financial information throughout the IPO process. As a result, our first hypothesis is stated as follows:

H1: IPO firms are more likely to restate their pre-IPO financial statements than their public counterparts.

Our interpretation for the first hypothesis is based on the assumption that we find a higher likelihood of restatements for IPO firms than other public firms if they intentionally inflate earnings before the IPO and the misreporting is detected later. However, an alternative explanation stems from higher litigation risk and regulatory pressure around IPO, which lead to intense monitoring by the various parties that are involved in the IPO process (e.g., venture capitalists, underwriters, auditors, and regulators). One can argue that intense monitoring is associated with a higher detection probability of misreporting in financial statements, and thus, IPO firms may restate more than their public counterparts even though their financial reporting quality is not significantly different. To rule out this alternative explanation, we examine whether restatements are associated with the other indications of lower financial reporting quality. We use three different settings throughout the IPO process – the level of discretionary accruals in the financial statements disclosed *before* IPO, the first day returns *on* the IPO date, and the announcement returns of restatements *after* IPO.

The first variable we are interested in is the level of discretionary accruals in the financial statements disclosed *before* IPO since prior literature uses discretionary accruals as a measure of earnings management in the same setting. If IPO firms aggressively report their financial information and subsequently restate their financial statements, pre-IPO financials of these firms will show a higher level of discretionary accruals. In contrast, we would not find a significant difference in the level of discretionary accruals for firms that restate their pre-IPO financials if the higher detection probability of immaterial errors results in the higher likelihood of restatements. This provides our second hypothesis:

H2: IPO firms that restate their pre-IPO financials are more likely to have a higher level of discretionary accruals than other IPO issuers.

We also examine whether IPO firms that restate their pre-IPO financials experience more severe IPO underpricing *on* the first day of public trade. There is extensive literature regarding IPOs, including the pricing of IPO shares and post-IPO performance (see Ritter and Welch 2002 for a review). This literature establishes that the average IPO is underpriced, i.e., the offer price of IPO shares is lower than the closing price of the shares on the first day of the IPO. The underpricing is substantial: for example, Ritter and Welch (2002) report an average first-day return of 18.8% for a sample of IPOs between 1980 and 2001. In finance literature, IPO underpricing is typically attributed to the information asymmetry among less informed new investors and relatively better-informed pre-IPO shareholders (e.g., Rock 1986; Boone et al. 2016). The degree of information asymmetry among market participants, however, can be mitigated by better financial reporting quality (e.g., Wittenberg-Moerman 2008; Ramalingegowda et al. 2013). As such, we argue that misstatements of pre-IPO financials are likely to increase the information asymmetry among IPO market participants, which leads to an increase in underpricing. This provides our third hypothesis:

H3: IPO firms that restate their pre-IPO financials experience more severe IPO underpricing than other IPO issuers.

Finally, we examine whether IPO firms that restate their pre-IPO financials encounter more negative stock market reactions when they announce such restatements *after* IPO. In prior literature, the market reaction to restatement announcements has been used as a measure of severity of restatements (e.g., Hennes et al. 2008; Bens et al. 2012). If IPO firms intentionally misreport their pre-IPO financials to mislead investors to participate in the deal, the revelation of such restatements is more surprising to the stock market. Accordingly, we argue that announcement returns are likely to be more negative for restatements of pre-IPO financials than for those of the other public firms. Thus, our fourth hypothesis is stated as follows:

H4: The restatement announcement returns of IPO firms are more negative than those returns of their public counterparts.

3. Research Design

Test of the Likelihood of Restatements

Our first test is whether IPO firms are more likely to restate their pre-IPO financial statements than their public counterparts. We collect information about restatements from Audit Analytics.[3] We identify the cases where the company restates its pre-IPO financial statements if the beginning date of the restatement period provided by Audit Analytics is before the IPO issue date. Pre-IPO financial statements are defined as the financial statements that are disclosed within one year before the IPO date and included in the IPO prospectus.

Following Francis et al. (2013), we examine the likelihood of restatements for IPO firms using a probit regression model as follows:

$$\begin{aligned} RESTATE = {} & \beta_0 + \beta_1 IPO + \beta_2 SIZE + \beta_3 GROWTH + \beta_4 AGE + \beta_5 ROA + \beta_6 LEV \\ & + \beta_7 LOSS + \beta_8 \text{INVAR} + \beta_9 FOREIGN + \beta_{10} LIT + \beta_{11} BIG4 + \beta_{12} AFEE \\ & + \beta_{13} NAFEE + \beta_{14} AUDITOR\Delta + \beta_{15} QUAL + \text{Year FE} + \text{Industry FE} \\ & + \varepsilon, \end{aligned} \tag{1}$$

where the dependent variable, *RESTATE* is one if financial statements of the specific firm-year are subsequently restated and zero otherwise; the test variable *IPO* is an indicator variable that is one for IPO firms, and zero for the matched publicly traded firms. The variable of interest β_1 is expected to be positive to support H1. Variable definitions are included in the appendix.

[3] We rely on restatements from Audit Analytics because Audit Analytics is a more comprehensive database relative to other restatement data sources (Scholz 2008). We do not use SEC Accounting and Auditing Enforcement Releases (AAERs) because of the low frequency of such SEC enforcement actions in our sample of per-IPO financials.

We include control variables identified in prior research as the determinants of restatements. We control for *SIZE*, *GROWTH*, and *AGE* because IPO firms are fundamentally different from other mature public firms. We also control for the different IPO firm characteristics. Prior literature demonstrates that firms restating their financial statements tend to be unprofitable and more complex (Hennes et al. 2008). We include *ROA*, *LEV,* and *LOSS* to control profitability and use *INVAR*, *FOREIGN,* and *LIT* to control for firm complexity. We consider audit-related variables as our second group of control variables. We include *BIG4*, *AUDITORΔ,* and *QUAL* to control for the different audit quality implications from the type of auditors and audit opinions. We control for audit-related fees because they represent the economic bond between clients and auditors, which may reduce auditor's objectivity and professional skepticism (e.g., Kinney Jr. et al. 2004). For all of our tests, we include year and industry fixed effects to control for the systematic time and industry effects. Standard errors are clustered by industry and year.

Test for Discretionary Accruals

Our second test is whether IPO firms that restate their pre-IPO financials are more likely to have a higher level of discretionary accruals than other IPO issuers in financial statements disclosed before IPO. Our measure of discretionary accruals is the performance-matched accruals measure developed by Kothari et al. (2005). First, we estimate discretionary accruals using the residuals from the Jones model (Dechow et al. 1995), which is estimated annually for each industry based on the two-digit SIC:

$$Accruals_{i,t} = \beta_0 + \beta_1 1/AT_{i,t-1} + \beta_2 \Delta SALES_{i,t} + \beta_3 PPE_{i,t} + \varepsilon_{i,t}, \quad (2)$$

where AT_{t-1} is lagged total assets; $\Delta SALES_{i,t}$ is changes in annual sales divided by lagged total assets; $PPE_{i,t}$ is net property, plant, and equipment divided by lagged total assets. Next, we match each firm-year observation with another from the same two-digit SIC code and year with the

closest return on assets in the current year. We define the performance-matched discretionary accruals for firm *i* in year *t* as the Jones-model discretionary accrual in year t minus the matched firm's Jones-model discretionary accrual for year t. We use the entire COMPUSTAT universe of firms to estimate each covariance of the model and to match the sample based on performance.

To test whether discretionary accruals in restated pre-IPO financial statements are higher than those in pre-IPO financial statements that are not restated, we modify the model used in Venkataraman et al. (2008) and Krishnan and Yu (2012) for IPO firms as follows:

$$\begin{aligned} DACC = {} & \beta_0 + \beta_1 RESTATE + \beta_2 ROA + \beta_3 MTB + \beta_4 ATGROWTH \\ & + \beta_5 SALEGROWTH + \beta_6 STARTUP + \beta_7 BIG4 + \beta_8 \text{LEV} + \beta_9 CFO \\ & + \beta_{10} LOSS + \beta_{11} LIT + \beta_{12} VC + \beta_{13} PRESTIGE + \beta_{14} PROCEEDS \\ & + \text{Year FE} + \text{Industry FE} + \varepsilon, \end{aligned} \tag{3}$$

where the dependent variable, *DACC* is the performance-matched discretionary accruals; the test variable *RESTATE* is one if financial statements of the specific firm-year are subsequently restated, and zero otherwise. The variable of interest β_1 is expected to be positive to support H2.

We include control variables following prior literature. We control for firm characteristics such as profitability, leverage, and growth. We also control for IPO deal characteristics. We control for whether the issue is backed by a venture capitalist (*VC*) and the underwriter ranking (*PRESTIGE*) from Carter and Manaster (1990) because their monitoring reduces the level of discretionary accruals (Morsfield and Tan 2006; Wongsunwai 2013). We include IPO proceeds (*PROCEEDS*) because of its relation with the amount of working capital (Armstrong et al. 2016)

Test for IPO Underpricing

Our third test is whether IPO firms that restate their pre-IPO financials are more likely to experience more severe underpricing than other IPO issuers. To test for IPO underpricing, we use a multivariate regression model of underpricing following Li et al. (2016) as follows:

$$\begin{aligned} UNDERPRICING &= \beta_0 + \beta_1 RESTATE + \beta_2 REVISION + \beta_3 SPREAD + \beta_4 TECH \\ &+ \beta_5 MTB + \beta_6 IPORET + \beta_7 IPOTOT + \beta_8 \text{VWTOT} + \beta_9 AGE \\ &+ \beta_{10} STARTUP + \beta_{11} BIG4 + \beta_{12} VC + \beta_{13} PRESTIGE \\ &+ \beta_{14} PROCEEDS + \text{Year FE} + \text{Industry FE} + \varepsilon, \end{aligned} \quad (4)$$

where the dependent variable, *UNDERPRICING*, is defined as the logarithm of the first-day closing price minus the offer price, scaled by the offer price; the test variables *RESTATE* is one if financial statements of the specific firm-year are subsequently restated, and zero otherwise. The variable of interest β_1 is expected to be positive to support H3.

Following Li et al. (2016), we include *REVISION* and *SPREAD* because the price revision during the book-building process and the level of underwriter fees are positively associated with underpricing. We control for the recent IPO market returns (*IPORET*) and IPO activities (*IPOTOT*), which are positively associated with IPO first-day returns (e.g., Lowry 2003). We also control for the firm- and IPO deal-related characteristics as we include in Equation (3).

Test for Restatement Announcement Returns

Our final test is whether the restatement announcement returns of IPO firms are more negative than those returns of their public counterparts. We examine restatement announcement returns using the following regression:

$$
\begin{aligned}
CAR = {} & \beta_0 + \beta_1 IPO + \beta_2 SIZE + \beta_3 GROWTH + \beta_4 AGE + \beta_5 ROA + \beta_6 LEV + \beta_7 LOSS \\
& + \beta_8 INVAR + \beta_9 LIT + \beta_{10} BIG4 + \beta_{11} AFEE + \beta_{12} NAFEE \\
& + \beta_{13} AUDITOR\Delta + \beta_{14} QUAL + \beta_{14} RES\_ACC + \text{Year FE} + \text{Industry FE} \\
& + \varepsilon,
\end{aligned} \tag{5}
$$

where the dependent variable, *CAR*, is cumulative abnormal returns from the day -1 to day +1 of the restatement announcement date; the test variable, *IPO*, is one for restatements of pre-IPO financials, and zero for restatements of the matched publicly traded firms. The variable of interest β_1 is expected to be negative to support H4. We include a similar set of control variables as we include in Equation (1) for the likelihood of restatements. In addition, we include *RES_ACC* to control for the impact of the severity of restatements on announcement returns.

4. Sample Selection and Descriptive Statistics

Table 1 presents our sample selection procedure. We begin with identifying all firms that went public during the period 2002 through 2016 (2,650 firms in total) from the Security Data Corporation (SDC) database.[4] Following prior literature (e.g., Loughran and Ritter 2004), we exclude American Depository Receipts (ADRs), unit IPOs, and financial firms (SIC does 6000–6999). We eliminate firms that do not have Audit Analytics and Compustat data to compute the control variables used in our restatement test. The resulting sample consists of 1,100 pre-IPO financials from IPO firms.

We construct a different sample for each of our tests based on these 1,100 pre-IPO financials. First, the test for the likelihood of restatements for pre-IPO financials requires us to compare IPO firms with their public counterparts. Since IPO firms are fundamentally different from more mature publicly traded companies, we use propensity score matching to construct the

[4] We cut off the sample in 2016 because Cheffers et al. (2010) show that the average time lag between the original financial statement release and a restatement is about 700 days, or roughly two years.

sample with similar firm characteristics. Our one-to-one matching generates 1,100 pre-IPO financials from IPO firms and 1,100 financials from public firms, and we use this subsample to test the likelihood of restatements.

Our second and third tests are about whether the firms restating their pre-IPO financials are different from the other IPO issuers. Therefore, we use 1,100 pre-IPO financials for our test for the discretionary accruals. For the underpricing test, we exclude the observations without additional control variables related to IPO deal characteristics, which results in 1,014 pre-IPO financials in this subsample.

Our final test examines abnormal stock returns of the restatement announcements, so the sample is limited to the firms that restate their financial statements. Among 166 IPO firms that restate their pre-IPO financials, only 95 IPO firms remain after we exclude the observations with missing variables for our return tests. We restrict our sample to the IPO firms with available stock return data around restatement announcements. As the likelihood of restatements, we use propensity score matching to compare IPO firms with their public counterparts. As a result, we end up with 95 restatements of pre-IPO financials and 95 restatements of publicly traded firms for the announcement return test.

Propensity Score Matching

This section explains our propensity score matching procedure. IPO firms are typically younger, smaller, and more growth-oriented than publicly traded companies. To control for the different characteristics of IPO firms, we perform propensity score matching to construct our main sample for the test of the likelihood of restatements. Specifically, we match each pre-IPO firm-year with one publicly traded firm-year in terms of the propensity score based on firm size, growth, and age following Armstrong et al. (2016). By doing so, we can compare the likelihood of

restatements of IPO firms for pre-IPO financials with that of publicly traded firms with similar characteristics. We estimate the probit regression model for propensity score as follows:

$$\begin{aligned} IPO = {} & \beta_0 + \beta_1 SIZE + \beta_2 GROWTH + \beta_3 AGE + \beta_4 ROA + \beta_5 LEV + \beta_6 LOSS \\ & + \beta_7 \text{INVAR} + \beta_8 FOREIGN + \beta_9 LIT + \beta_{10} BIG4 + \beta_{11} AFEE \\ & + \beta_{12} NAFEE + \beta_{13} AUDITOR\Delta + \beta_{14} QUAL + \text{Year FE} + \text{Industry FE} \\ & + \varepsilon, \end{aligned} \tag{6}$$

where the dependent variable *IPO* is one for pre-IPO firm-year and zero for publicly traded firm-year. Since the theoretical justification for the inclusion of a control variable is essentially the same when using propensity score matching and multiple regression (Shipman et al. 2017), we include the same set of independent variables as we use in Equation (1). As a result of propensity score matching with no replacement and 0.03 caliper distance, our final sample for the restatement test consists of 1,100 pre-IPO financials from IPO firms and 1,100 matched financials from public firms.

Table 2, Panel A provides the estimation results for the propensity score from Equation (6). We find that IPO firms are younger, smaller, and more growth-oriented than publicly traded companies. Table 2, Panel B tabulates descriptive statistics for the restatements test sample after the propensity score matching. None of the fourteen covariates are significantly different ($p < 0.05$) between the two groups after matching, suggesting that the covariate balance substantially improves in the matched sample. However, *RESTATE* and *RES_ADVERSE* are significantly different across IPO firms and public counterparts after matching, providing initial support for our H1.

As explained in the sample selection, we perform another propensity score matching for our final test of the restatement announcement returns. We estimate the similar probit model for

propensity score as Equation (6). The only difference is we include *RES_ACC* to control for the impact of the severity of restatements on announcement returns as Equation (5). The estimation results and descriptive statistics after matching are included in Table 2, Panels C and D. We have similar results with the previous Panels. *CAR* is significantly different across the restatements of pre-IPO financials from IPO firms and those of public firms, providing initial results for our H4.

5. Empirical Results

The Likelihood of Restatements

Table 3 presents the likelihood of restatements across the IPO firms and their public counterparts on our main matched sample. Consistent with our hypothesis, the coefficient on IPO in Column (1) is significantly positive (0.208, p-value 0.008), suggesting that IPO firms are more likely to restate their pre-IPO financials than their public counterparts. This effect is also economically significant. The marginal effect of *IPO* is 2.8%, which represents a 39% increase in the likelihood of restatements for IPO firms compared to 7.2% for our matched public firms.

To reduce the probability that our restatement variable captures instances of unintentional reporting errors instead of earnings management, we also examine the restatements that decrease net income (*RES_ADVERSE*). We re-estimate Equation (1) using *RES_ADVERSE* as the dependent variable. The coefficient on *IPO* in Column (2) is significantly positive (0.216, p-value 0.007).[5] Overall, the results indicate that IPO firms are more likely to restate their pre-IPO financials than their public counterparts to succeed in their debut on public equity market.

Discretionary Accruals

[5] Audit Analytics categorize restatements income-increasing vs. income-decreasing restatements. In addition, Audit Analytics provides the underlying reason of restatements using the categories of fraud, accounting, and clerical errors. Most of our restatements are due to accounting, suggesting that our restatement variable captures the misapplication of GAAP, instead of mere errors, which validates our inference. In untabulated tests, we conduct our analyses excluding clerical errors and find qualitatively similar results.

Next, we examine whether restatements are associated with the other indications of lower financial reporting quality. The first variable we are interested in is discretionary accruals. We focus on IPO firms and examine whether IPO firms restating their pre-IPO financials are likely to exhibit a higher level of discretionary accruals than the other IPO issuers.

Table 4 provides evidence on the level of discretionary accruals. We find a positive association between restatements of pre-IPO financials and discretionary accruals. In Column (1), the coefficient on *RESTATE* is 0.048 (p-value 0.049). The results are similar to income-decreasing restatements. In Column (2), the coefficient on *RES_ADVERSE* is 0.039 (p-value 0.015). The results suggest that restatements are likely to be associated with earnings management, also support the stream of prior literature that uses discretionary accruals as a measure of earnings management.

IPO Underpricing

We replace discretionary accruals with IPO underpricing to test whether IPO firms restating their pre-IPO financials are likely to experience more severe underpricing than the other IPO issuers. Table 5 presents the estimation results with IPO underpricing as the dependent variable. We find a positive association between restatements of pre-IPO financials and IPO underpricing. In Column (1), the coefficient on *RESTATE* is 0.026 (p-value 0.076). The results are similar when we focus on income-decreasing restatements. In Column (2), the coefficient on *RES_ADVERSE* is 0.034 (p-value 0.044), supporting H3. Our findings on underpricing suggest that misreported financial statements result in higher information asymmetry on the IPO offering date. As a result, the worse financial reporting quality incurs the real cost to the IPO firms in the form of underpricing.

Restatement Announcement Return

Finally, we examine whether IPO firms that restate their pre-IPO financials encounter more negative stock market reactions when they announce such restatements after IPO. As explained, we use propensity score-matched sample for announcements of restatements for pre-IPO financials from IPO firms and those for their public counterparts.

Table 6 presents the results of our restatement announcement returns tests. Using three-days cumulative returns around restatement announcement dates as the dependent variable, we find that the stock market reacts more negatively for restatement announcements of IPO firms. In Column (1), the coefficient on *Restate* is -0.025 (p-value 0.093), and in Column (2), the coefficient on *RES_ADVERSE* is -0.044 (p-value 0.038). The results mitigate the concern that restatements of IPO firms are trivial due to higher regulatory scrutiny around IPOs.

In sum, we find that IPO firms are more likely to misstate their financial statements. We also provide evidence that those misstated pre-IPO financial statements are associated with the indications of lower financial quality with the possible intention of earnings management. Collectively, our findings indicate that IPO firms issue misstated financial statements that translate into lower financial reporting quality to succeed in their public debuts and equity financing.

6. Conclusion

We examine the likelihood of restatements for the financial statements disclosed before the initial public offerings (IPO) and the nature of these misstated financial statements. We find that before the IPO date, IPO firms are more likely to issue materially misstated financial statements than other public firms. Compared to the other IPO issuers, firms that restate their pre-IPO financials exhibit higher discretionary accruals and experience severe IPO underpricing. Also, the stock market reacts more negatively to the restatement announcements for pre-IPO financials than those of other public firms. Overall, our findings indicate that IPO firms are likely to issue

misstated financial statements that translate into lower financial reporting quality to succeed in their public debuts and equity financing.

Our paper makes several contributions to prior literature. First, this study adds to the literature on financial reporting quality around equity issues (e.g., Teoh et al. 1998; DuCharme et al. 2004; Lee and Masulis 2009; Cohen and Zarowin 2010; Kothari et al. 2016; Basu et al. 2018). Consistent with prior literature, we document that firms misstate their financial statements before they secure funding in the public equity market. More specifically, this study sheds light on the debate about earnings management around IPO (e.g., Teoh et al. 1998; Darrough and Rangan 2005; Katz 2009; Cecchini et al. 2012; Wongsunwai 2013; Armstrong et al. 2016; Fedyk et al. 2017; Sletten et al. 2018). While prior literature has consensus that IPO firms have higher discretionary accruals at the year of IPO, there is mixed evidence whether they have abnormally high discretionary accruals *before* IPO (Ball and Shivakumar 2008; Venkataraman et al. 2008; Sletten et al. 2018). We fill this gap in the literature by providing empirical evidence about the likelihood of restatements of pre-IPO financials. Finally, this study contributes to the literature on accounting restatements (e.g., Hennes et al. 2008; Bens et al. 2012; Francis and Michas 2013; Eshleman and Guo 2014; Hennes et al. 2014).

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Appendix: Variable Definitions

Variable	Description
RESTATE	An indicator variable equal to one if financial statements of the specific firm-year are subsequently restated and zero otherwise
RES_ADVERSE	An indicator variable equal to one if financial statements of the specific firm-year are subsequently restated in the manner to reduce net income and zero otherwise
IPO	An indicator variable equal to one for pre-IPO firm-year and zero for the matched publicly-traded firm-year
SIZE	The natural log of one plus average total assets (*AT*)
GROWTH	Changes in sales (*SALE*) scaled by average total assets (*AT*)
AGE	The natural log of one plus the number of years since the firm was founded
ROA	Income before extraordinary items (*IB*) scaled by average total assets (*AT*)
LEV	Total long-term debt(*DLTT*) scaled by average total assets (*AT*)
LOSS	An indicator variable that is one if net income (*NI*) is negative, zero otherwise
INVAR	The sum of inventory (*INV*) and receivables (*REC*) scaled by total assets (*AT*)
FOREIGN	The pre-tax foreign income (*PFI*) over pre-tax income (*PI*)
LIT	An indicator variable equal to one if falls in high litigation risk industry as identified by SIC codes 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370 and zero otherwise, following Francis et al. (1994)
BIG4	An indicator variable equal to one if the firm is audited by one of the Big 4 auditors, and zero otherwise
AFEE	The natural log of audit fee
NNFEE	The natural log of non-audit fee
AUDITOR∆	An indicator variable equal to one if an auditor changes from the previous year, and zero otherwise
QUAL	An indicator variable equal to one if the firm receives a qualified audit opinion, and zero otherwise
DACC	The performance-matched discretionary accruals following Kothari et al. (2005)
MTB	Market-to-book ratio, measured as the market value of equity (*PRCC_F*CSHO*) scaled by the book value of equity (*CEQ*)
ATGROWTH	Asset growth, defined as changes in assets (*AT*) scaled by total assets of the prior year
SALEGROWTH	Sales growth, defined as changes in sales (*SALE*) scaled by lagged sales
STARTUP	An indicator variable equal to one if annual sales revenues (*SALE*) are less than one million dollars within three years before IPO, and zero otherwise
CFO	Cash flow from operations (*OANCF*) scaled by average total assets
VC	An indicator variable equal to one if the issue is backed by a venture capitalist, and zero otherwise
PRESTIGE	An indicator variable equal to one if the underwriter ranking from Carter and Manaster (1990) is 9.001 and zero otherwise. The Carter and Manaster

	underwriter rankings are updated every two to three years on Jay Ritter's website. We use the specific underwriter ranking on the IPO issue year.
PROCEEDS	The natural log of one plus IPO proceeds scaled by the Consumer Price Index for the issue year
UNDERPRICING	The natural log of the first-day closing price minus the offer price scaled by the offer price
REVISION	The price change during the IPO book-building process, measured as the percentage price revision from the midpoint of the initial filing range to the offer price
SPREAD	The underwriter fee, measured as the total underwriting, management, and selling fee scaled by the amount offered in the IPO
TECH	An indicator variable equal to one for firms in the technology industry as identified by SIC codes 2833-2836, 3571, 3572, 3575, 3577, 3578, 3661, 3663, 3669, 3674, 3812, 3823, 3825-3827, 3829, 3841, 3845, 4812, 4813, 4899, 7370, 7371-7375, and 7377-7379 (Cliff and Denis 2004)
IPORET	The average first-day return for other IPO firms during the two months prior to the specific IPO issue month
IPOTOT	The total number of IPOs over the two months prior to the specific IPO issue month
VWTOT	The sum of the value-weighted daily market return for the two months preceding the IPO (Li et al. 2016)
CAR	Cumulative abnormal returns from the day -1 to day +1 of the restatement announcement date
RES_ACC	An indicator variable equal to one if the restatement is due to misapplication of GAAP, and zero otherwise

Table 1. Sample selection procedure

Number of IPOs on the SDC database with valid CUSIPs for 2002-2016	2,650
Less: American Depository Receipts (ADRs) and unit IPOs	-309
Less: Firms in finance industry	-370
Less: Firms with missing control variables for restatements tests	-871
Subtotal number of firm-commitment IPOs prior to PSM analyses	1,100
Add: Matched publicly traded firms from PSM	1,100
Number of firms for restatement tests	**2,200**
Number of firms for discretionary accrual tests	**1,100**
Less: Firms with missing control variables for underpricing tests	-86
Number of firms for underpricing tests	**1,014**
Number of IPOs with restated financial statements	166
Less: Firms missing variables to calculate returns	-65
Less: Firms missing control variables for restatement announcement returns	-6
Subtotal numbers of IPOs for restatement announcement returns tests	95
Add: Matched publicly traded firms with restatements from PSM	95
Number of firms for return tests	**190**

The table presents the sample selection criteria. The sample for the likelihood of restatement consists of 1,100 pre-IPO financials from IPO firms and 1,100 propensity score-matched financials from public firms. The sample for the restatement announcement returns consists of 95 restatements for pre-IPO financials from IPO firms and 95 propensity score-matched restatements for financials from public firms.

Table 2. Propensity Score Matching

Panel A. IPO Firm Characteristics

DEP = IPO	Coefficient	P-value
SIZE	-0.192***	0.000
GROWTH	0.186***	0.000
AGE	-0.325***	0.000
ROA	0.001	0.807
LEV	0.001	0.504
LOSS	0.043	0.234
INVAR	0.371***	0.000
FOREIGN	0.002	0.325
LIT	-0.099	0.108
BIG4	0.615***	0.000
AFEE	0.016	0.410
NAFEE	-0.018***	0.000
AUDITORΔ	-0.563***	0.000
QUAL	0.030	0.422
IND FE	Yes	
YEAR FE	Yes	
No. of Obs.	25,790	
(Psuedo) R-Square	0.0604	

Panel B. Descriptive Statistics for Restatement Test after Matching

Variable	IPO (n=1,100)		Non-IPO (n=1,100)		Paired p-value
	Mean	Median	Mean	Median	
RESTATE	0.101	0.000	0.072	0.000	0.015
RES_ADVERSE	0.084	0.000	0.058	0.000	0.020
SIZE	4.624	4.236	4.662	4.605	0.631
SGROWTH	0.300	0.163	0.277	0.088	0.651
AGE	2.624	2.565	2.613	2.708	0.758
ROA	-0.563	-0.026	-0.704	-0.027	0.618
LEV	0.487	0.244	0.549	0.087	0.641
LOSS	0.560	1.000	0.559	1.000	0.966
INVAR	0.215	0.168	0.213	0.146	0.764
FOREIGN	0.127	0.000	0.066	0.000	0.472
LIT	0.570	1.000	0.544	1.000	0.213
BIG4	0.857	1.000	0.843	1.000	0.340
AFEE	12.949	13.119	12.977	13.144	0.635
NAFEE	8.332	10.485	8.275	10.320	0.793
AUDITORΔ	0.025	0.000	0.025	0.000	0.891
QUAL	0.301	0.000	0.335	0.000	0.082

Panel C. Pre-IPO Financial Restatement Characteristics

DEP = IPO	Coefficient	P-value
SIZE	-0.176***	0.001
GROWTH	0.299**	0.013
AGE	-0.062***	0.000
ROA	0.019	0.714
LEV	0.003	0.813
LOSS	-0.227*	0.070
INVAR	-0.408	0.261
FOREIGN	0.000	0.902
LIT	0.066	0.681
BIG4	0.376**	0.032
AFEE	0.293***	0.000
NAFEE	0.015	0.332
AUDITORΔ	-0.186	0.303
QUAL	0.001	0.993
RES_ACC	-0.157	0.524
IND FE	Yes	
YEAR FE	Yes	
No. of Obs.	3,994	
(Psuedo) R-Square	0.3238	

Panel D. Descriptive Statistics for Restatement Announcement Return Test after Matching

Variable	IPO restatements (n=95)		Non-IPO restatements (n=95)		Paired p-value
	Mean	Median	Mean	Median	
CAR	-0.037	-0.010	-0.007	-0.002	0.075
SIZE	5.682	5.663	5.249	5.234	0.087
GROWTH	0.238	0.142	0.273	0.111	0.696
AGE	6.600	5.000	6.779	5.000	0.875
ROA	-0.158	0.009	-0.269	0.003	0.496
LEV	0.354	0.266	0.199	0.128	0.015
LOSS	0.411	0.000	0.495	0.000	0.246
INVAR	0.216	0.161	0.217	0.142	0.979
FOREIGN	0.283	0.000	0.083	0.000	0.219
LIT	0.568	1.000	0.558	1.000	0.885
BIG4	0.832	1.000	0.789	1.000	0.462
AFEE	13.961	13.979	13.679	13.649	0.063
NAFEE	10.500	11.581	9.557	11.626	0.141
AUDITORΔ	0.095	0.000	0.158	0.000	0.192
QUAL	0.442	0.000	0.400	0.000	0.559
RES_ACC	0.947	1.000	0.937	1.000	0.758

The table presents the estimates for propensity matching and descriptive statistics. Panel A presents the results of propensity score estimates for the likelihood of restatement test. Panel B presents descriptive statistics of the sample for the likelihood of restatement test, which consists of 1,100 pre-IPO financials from IPO firms and 1,100 propensity score-matched financials from public firms. Panel C presents the results of the propensity score estimates for the restatement announcement return test. Panel D presents descriptive statistics of the sample for the restatement announcement return test, which consists of 95 restatements for pre-IPO financials from IPO firms and 95 propensity score-matched restatements for financials from public firms. Variables are defined in the appendix. Standard errors are clustered by industry and year level. *, **, *** indicate two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively, for the Panels A and B. Tests of differences across subsamples in Panels B and D are based on a paired t-test.

Table 3. Likelihood of Restatements

Variables	(1) DEP = *RESTATE*		(2) DEP = *RES_ADVERSE*	
	Coef.	p-value	Coef.	p-value
IPO	**0.208*** **	**0.008**	**0.216*** **	**0.007**
SIZE	-0.012	0.745	-0.002	0.950
GROWTH	0.018	0.522	0.043*	0.056
AGE	-0.008	0.880	-0.051	0.375
ROA	-0.023***	0.004	-0.026***	0.003
LEV	-0.039**	0.046	-0.042*	0.064
LOSS	-0.184**	0.042	-0.169*	0.081
INVAR	0.404*	0.088	0.369	0.121
FOREIGN	0.030***	0.004	-0.010	0.358
LIT	0.307*	0.062	0.327**	0.029
BIG4	-0.009	0.942	-0.073	0.583
AFEE	0.085**	0.029	0.107**	0.021
NAFEE	0.026***	0.002	0.019**	0.021
AUDITORΔ	0.336	0.111	0.208	0.420
QUAL	0.292***	0.001	0.246***	0.008
IND FE	Yes		Yes	
YEAR FE	Yes		Yes	
No. of Obs.	2,200		2,200	
(Psuedo) R-Square	0.0861		0.0857	

The table presents the results of regressions of the likelihood of restatement (*RESTATE*) and the likelihood of income-decreasing restatement (*RES_ADVERSE*) on whether the company is engaged in IPO (*IPO*). Bolded variables are the variable of interest. The sample consists of 1,100 pre-IPO financials from IPO firms and 1,100 propensity score-matched financials from public firms. Variables are defined in the appendix. Standard errors are clustered by industry and year level. *, **, *** indicate two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 4. The association between discretionary accruals and restatements

DEP = DACC	**(1)**		**(2)**	
	Coef.	p-value	Coef.	p-value
RESTATE	**0.048****	**0.049**		
RES_ADVERSE			**0.039****	**0.015**
ROA	0.603***	0.001	0.604***	0.000
MTB	0.000	0.795	0.000	0.780
ATGROWTH	-0.014	0.121	-0.014	0.120
GROWTH	0.004	0.668	0.004	0.662
STARTUP	-0.111	0.156	-0.111	0.157
BIG4	0.018	0.496	0.019	0.481
LEV	0.087**	0.013	0.088**	0.013
CFO	-0.924***	0.001	-0.925***	0.000
LOSS	-0.062***	0.003	-0.062***	0.003
LIT	0.041	0.263	0.041	0.270
VC	-0.047	0.053	-0.047**	0.049
PRESTIGE	0.011	0.518	0.011	0.523
PROCEEDS	-0.035***	0.001	-0.035***	0.001
IND FE	Yes		Yes	
YEAR FE	Yes		Yes	
No. of Obs.	1,100		1,100	
Adjusted R-Square	0.3357		0.3350	

The table presents the results of regressions of the level of discretionary accruals (*DACC*) on restatements (*RESTATE*) and income-decreasing restatements (*RES_ADVERSE*). Bolded variables are the variable of interest. The sample consists of 1,100 IPO firms. Variables are defined in the appendix. Standard errors are clustered by industry and year level. *, **, *** indicate two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 5. IPO underpricing for the firms with restatements

DEP = UNDERPRICING	**(1)**		**(2)**	
	Coef.	p-value	Coef.	p-value
RESTATE	**0.026***	**0.076**		
RES_ADVERSE			**0.034****	**0.044**
REVISION	0.433***	0.000	0.434***	0.000
SPREAD	0.017	0.250	0.017	0.250
TECH	-0.007	0.707	-0.006	0.746
MTB	0.001	0.353	0.001	0.365
IPORET	0.000	0.545	0.000	0.553
IPOTOT	0.001	0.338	0.001	0.338
VWTOT	0.231*	0.086	0.237*	0.077
AGE	-0.005	0.458	-0.004	0.476
STARTUP	-0.007	0.585	-0.007	0.593
BIG4	0.003	0.813	0.002	0.838
VC	0.038**	0.016	0.037**	0.016
PRESTIGE	0.004***	0.003	0.004***	0.004
PROCEEDS	0.004	0.770	0.004	0.790
IND FE	Yes		Yes	
YEAR FE	Yes		Yes	
No. of Obs.	1,014		1,014	
Adjusted R-Square	0.2319		0.2326	

The table presents the results of regressions of IPO underpricing (*UNDERPRICING*) on restatements (*RESTATE*) and income-decreasing restatements (*RES_ADVERSE*). Bolded variables are the variable of interest. The sample consists of 1,014 IPO firms. Variables are defined in the appendix. Standard errors are clustered by industry and year level. *, **, *** indicate two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 6. Restatement announcement returns

DEP = CAR	(1) RESTATE		(2) RES_ADVERSE	
	Coef.	p-value	Coef.	p-value
IPO	**-0.025***	**0.093**	**-0.044****	**0.038**
SIZE	-0.008	0.473	0.009	0.384
GROWTH	-0.014	0.256	0.020	0.172
AGE	0.001	0.292	0.000	0.853
ROA	-0.010	0.140	-0.029	0.355
LEV	-0.029	0.320	-0.006	0.851
LOSS	-0.035	0.120	-0.023	0.226
INVAR	-0.062	0.182	0.019	0.719
FOREIGN	-0.001	0.949	-0.004	0.540
LIT	-0.018	0.207	0.016	0.398
BIG4	0.050*	0.079	0.052	0.122
AFEE	-0.005	0.716	-0.024	0.158
NAFEE	-0.002	0.242	-0.001	0.685
AUDITORΔ	-0.043	0.148	-0.048	0.310
QUAL	0.006	0.785	0.002	0.939
RES_ACC	-0.021	0.558	0.040	0.428
IND FE	Yes		Yes	
YEAR FE	Yes		Yes	
No. of Obs.	190		158	
R-Square	0.1572		0.1659	

The table presents the results of regressions of the restatement announcement returns (*CAR*) on the restatement is announced by the IPO firms (*IPO*). Bolded variables are the variable of interest. The sample consists of 95 (79) restatements of pre-IPO financials from IPO firms and 95 (79) propensity score-matched restatements of financials from public firms in Column 1 (Column 2). Variables are defined in the appendix. Standard errors are clustered by industry and year level. *, **, *** indicate two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.