SNEAKING IN THE BACK DOOR?

AN EVALUATION OF REVERSE MERGERS AND IPOS

by

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Sneaking in the Back Door? An Evaluation of Reverse Mergers and IPOs

Thesis directed by Associate Professor Alan Jagolinzer

I examine whether the financial reporting quality of firms that access capital markets through a reverse merger differs from that of firms that rely on the traditional and more onerous IPO process. Using a broad sample of reverse merger firms and a propensity score matched sample of IPOs, I find that reverse merger firms uniformly exhibit lower earnings quality as captured by several earnings attributes established in prior literature: accrual quality, earnings persistence, earnings predictability, cash persistence, cash predictability, earnings smoothness, conservatism, timeliness, and value relevance. I further find that these differences are attenuated for reverse merger firms with higher levels of institutional ownership. This study informs about the role of regulators and institutional investors in financial reporting. Finally, given recent U.S. Securities and Exchange Commission (SEC) enforcement actions against Chinese reverse merger firms, I use a difference in differences technique and find that Chinese reverse merger firms exhibit higher financial reporting quality than all other reverse merger firms.

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1. Introduction

In this paper, I examine whether financial reporting quality varies with the method firms use to go public. In particular, I focus on financial reporting quality of reverse mergers relative to that of initial public offerings (IPOs). A reverse merger is typically consummated when a public shell company and a private operating company perform a merger. A public shell company is a firm that has little or no assets or operations but nevertheless reports on a public stock exchange, In a reverse merger, the private operating company identifies a public shell company (or vice versa) as a merger candidate. Then, the public shell company issues a large number of shares to the shareholders of the private company, thereby making them the majority owners of the public shell company. Management of the previously private operating company (with all its operations) is retained and the combined entity continues to report under the registration of the shell company.[1] In this manner, the private company gains access to capital markets. This contrasts with the traditional and more onerous way of accessing capital markets via an IPO, which includes issuing a prospectus, underwriting, putting on a roadshow, and filing an S-1 registration with the U.S. Securities and Exchange Commission (SEC).

The number of reverse merger transactions per year has increased from 9 in 2001 to 180 in 2011, peaking at 258 in 2010. Perhaps more importantly, over the 2004 − 2011 period, the number of firms that have gone public using the reverse merger mechanism has been consistently and significantly higher than the number that have gone public via an IPO (PCAOB 2011). The prevalence of reverse mergers combined with the fact that they enable firms to bypass much of the regulatory process associated with access to capital markets, has attracted regulators' scrutiny. For example, the SEC issued Bulletin 2011-123 in June 2011. The Bulletin described

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[1] I provide further institutional details on reverse merger transactions in Section 2.

the reverse merger transaction, and warned investors to take precautions before investing in a reverse merger firm. Despite this widespread concern, there is little academic evidence on the financial reporting quality of reverse mergers.

Ex-ante it is not clear whether reverse merger firms exhibit poor financial reporting quality compared to firms that enter capital markets through the traditional IPO process. First, shareholders of reverse merger firms tend to be sophisticated. This is because shares issued in a reverse merger typically receive an exemption from registration under Rule 506 of Regulation D, which requires investors to be accredited or at least meet sophistication requirements.[2] Additionally, some reverse mergers are completed in conjunction with a Private Investment in Public Equity (PIPE) financing.[3] PIPE investors are required to meet similar accreditation and sophistication requirements. As accredited investors may have bargaining power and sophistication to demand information (Friedman 1994), reverse merger firms may display higher financial reporting quality.

Second, managers of reverse merger firms face less pressure to manage earnings which may result in higher earnings quality than IPO firms.[4] Completing a reverse merger is less dependent on market conditions than completing an IPO. The cyclicality of the IPO market (Lowry 2003) combined with evidence of more accrual management during high investor sentiment periods (Ali and Gurun 2009) suggests that IPO firms have greater incentives to manage earnings. Moreover, reverse mergers receive less underwriter support and analyst

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[2] Regulation D Rule 506 states that, "shares offered under Rule 506 are limited to no more than 35 purchasers. A corporation, partnership, or other entity shall be counted as one purchaser. Accredited investors are excluded from the calculation. Each purchaser who is not an accredited investor must have knowledge and experience in financial and business matters that he is capable of evaluating the merits and risks of the prospective investment."

[3] Private Investment in Public Equity (PIPE) financings are typically pre-arranged. I describe PIPEs further in Section 2.1.

[4] In this paper I use the terms 'earnings quality' and 'financial reporting quality' interchangeably.

coverage, and list on smaller stock exchanges resulting in lower market visibility, and, in turn, less pressure to meet earnings targets.

There also are a number of factors that may result in lower earnings quality at reverse merger firms. A reverse merger has less external oversight prior to going public than an IPO. It can also be completed more quickly which leaves less time for individuals outside the firm to perform due diligence (Aguilar 2011). Further, shares issued in a reverse merger are exempt from the requirements of the Securities Act of 1933. This leaves a reverse merger firm less susceptible to litigation compared to an IPO firm that must register its shares with the SEC. As a result of less oversight, less time for due diligence, and decreased litigation risk, reverse merger firms may exhibit lower earnings quality than IPO firms.

The above discussion suggests that whether reverse merger firms have higher or lower financial reporting quality vis-à-vis IPO firms is an empirical question. Using a broad sample of 440 reverse merger transactions and a propensity score matched sample of IPOs between 2001 and 2009, I examine a comprehensive set of earnings attribute measures (Accrual Quality, Earnings Persistence, Earnings Predictability, Cash Persistence, Cash Predictability, Smoothness, Conservatism, Timeliness, and Relevance). I document that reverse merger firms exhibit lower earnings quality relative to IPOs during the same time period.

While reverse merger firms avoid the scrutiny of regulators when entering public markets, some have institutional investors that could provide a similar monitoring role as regulators. Given their increased incentives to monitor management (i.e., large shareholdings) and the ability to affect change through large voting blocks (Brickley et al. 1988; Parrino et al. 2003), institutional investors play an important role in corporate governance (Dikolli et al. 2009). Furthermore, institutional investors may impact financial reporting. Bushee and Noe (2000) find

a positive association between higher disclosure quality and institutional ownership. Accordingly, I use the variation in reverse merger investor bases and examine whether the presence of institutional investors improves financial reporting quality. I sort the reverse mergers based on the percentage of institutional ownership and find that reverse merger firms in the top quartile exhibit statistically higher earnings quality than those reverse merger firms in the bottom quartile.

Next, I examine whether the monitoring performed by institutional investors has a similar influence to that of regulators. I compare the reverse mergers in the top quartile of institutional ownership to their matched IPO counterparts and find lower earnings quality only for two earnings proxies (Cash Predictability and Relevance). This suggests that the lower earnings quality of reverse mergers compared to IPOs is associated with reverse merger firms with little to no institutional ownership. Results are consistent with institutional investors playing a monitoring role similar to regulators in the financial reporting of reverse merger firms.

In April 2011 SEC Commissioner Luis Aguilar expressed concern that Chinese companies that use reverse mergers to enter U.S. public markets may have lower financial reporting quality.[5] Contrary to the SEC's concerns, I find that Chinese reverse mergers exhibit higher financial reporting quality than U.S. and other foreign reverse merger firms, based on evidence from a difference in differences research design. Thus sole emphasis on Chinese reverse mergers might be misplaced.

My paper contributes to the emerging literature on reverse mergers. Prior literature on reverse mergers is sparse and focuses on stock returns or determinants for reverse merger firms (Gleason et al. 2008; Floros and Sapp 2011; Adjei et al. 2008; Carpentier et al. 2012). A number

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[5] I refer to Chinese reverse mergers as operating companies, located in China, that merge with shell companies that are listed on U.S. stock exchanges.

of contemporaneous studies focus on Chinese reverse mergers. Most relevant to my study, Chen et al. (2012) and Givoly et al. (2012) find evidence of lower financial reporting quality at Chinese reverse merger firms relative to U.S reverse merger firms and other matched U.S. firms. In contrast, I find that Chinese reverse mergers have better financial reporting quality than all other reverse merger firms, thus issues with financial reporting quality are not limited to Chinese reverse mergers. Further, I examine the monitoring role of regulators and investors and find that institutional investors can act as "replacement officials" in the financial reporting process. I discuss each of these contemporaneous studies in Section 2.3.

My study has implications for the debate regarding whether excessive regulation turns off the flow of capital available to firms (e.g., Pavkov 2006), especially given the recent changes in securities policy and capital formation. The Jumpstart Our Business Startups (JOBS) Act was signed into law on April 5, 2012 and made changes to the registration of securities as well as the financial reporting of firms raising capital.[6] Regulators have expressed concern that the JOBS Act may lessen investor protections and increase fraudulent activity (McGladrey 2012). The results of my study are relevant to this debate and suggest that regulator's concerns over some of the changes in the JOBS Act are warranted; however, there are mitigating factors that may address those concerns.

The rest of the paper is organized as follows: Section 2 describes reverse mergers and discusses the prior literature. Section 3 contains hypotheses development. Section 4 describes the sample and measurement of earnings quality. Section 5 presents empirical results. Section 6 concludes and discusses implications.

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[6] The JOBS Act changed securities law to allow general solicitation for Regulation D offerings which means that companies and their brokers may advertise to the general public. Critics are concerned this will allow brokers to solicit unsuspecting investors, e.g. the elderly. The JOBS Act also reduced financial reporting requirements for firms with less than $1 billion in gross annual revenue in its most recently annual period. See Appendix B for a detailed discussion of changes resulting from the JOBS Act.

2. Institutional Background & Prior Literature

2.1 Reverse Mergers

Reverse mergers represent an alternative for private companies to gain access to public markets, without the time consuming and expensive registration process involved in an IPO.[7] Most commonly, public shell companies are used to perform a reverse merger. The SEC defines a shell company as a firm with no or nominal operations and assets.[8] Some shell companies maintain filings with the SEC and their shares are registered on public exchanges, most commonly the Over-the-Counter Bulletin Board (OTCBB).[9] These firms could have been created for the sole purpose of identifying a private target or are firms that previously had business operations and have since gone dormant or bankrupt but maintained their registration. After identifying each other as merger candidates, the public shell company and private operating company enter into negotiations on the terms of the proposed reverse merger transaction.[10]

The transaction is structured such that the public shell serves as the legal acquirer and accounting acquiree. The private operating company serves as the legal acquiree and accounting acquirer. The public shell issues a large number of shares to the shareholders of the private company in exchange for their shares in the private company. A sufficient number of shares of the legal acquirer are issued to ensure the shareholders of the private company have a controlling ownership of the post-acquisition consolidated firm. Figure 1 illustrates this process. As a

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[7] In its 10-K filing on March 31, 2008, Northern Oil & Gas, Inc. described their decision to perform a reverse merger as, "This process avoids the high cost of the registration of securities for public sale, including attendant legal and accounting expenses, and the usually lengthy process involved in the registration of securities."

[8] Securities Act Rule 405 and Exchange Act Rule 12b-2 define shell company as: "a registrant, other than an asset-backed issuer… that has: (1) No or nominal operations; and (2) Either: (i) No or nominal assets; (ii) Assets consisting solely of cash and cash equivalents; or (iii) Assets consisting of any amount of cash and cash equivalents and nominal other assets."

[9] Reverse Mergers occur on foreign exchanges as well; however, I limit my analysis to U.S. exchanges due to data restrictions.

[10] Reverse mergers can also occur between two operating public companies.

Figure 1:
Reverse Merger Transaction
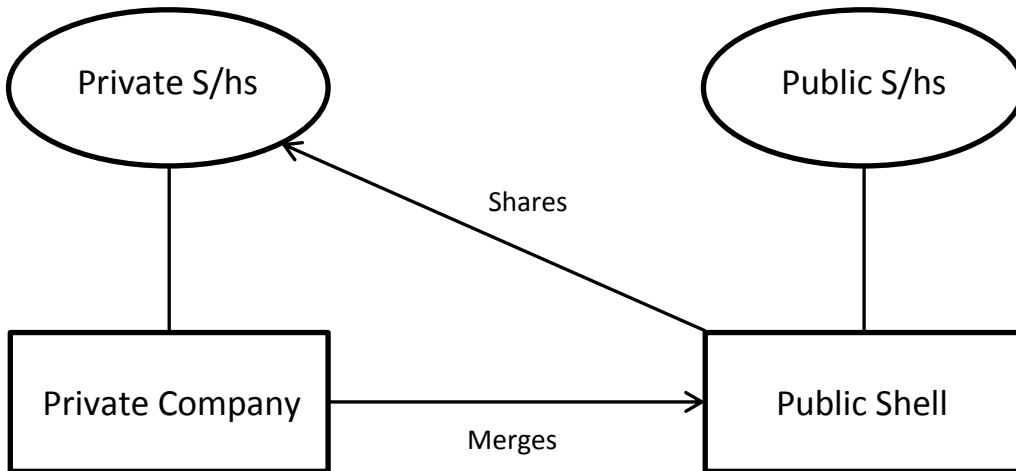
Reverse Merger Outcome

result, the private company effectively gains control of the public company and the once private company is identified as the accounting acquirer of the legal acquirer (ASC 805-40-05-01).

Following the acquisition, consolidated financial statements must be presented. While the financial statements will be identified as those of the public company, they will be a continuation of the financial statements of the private company/accounting acquirer. The staff of the SEC's Division of Corporate Finance provided the following interpretive guidance in March 2001:
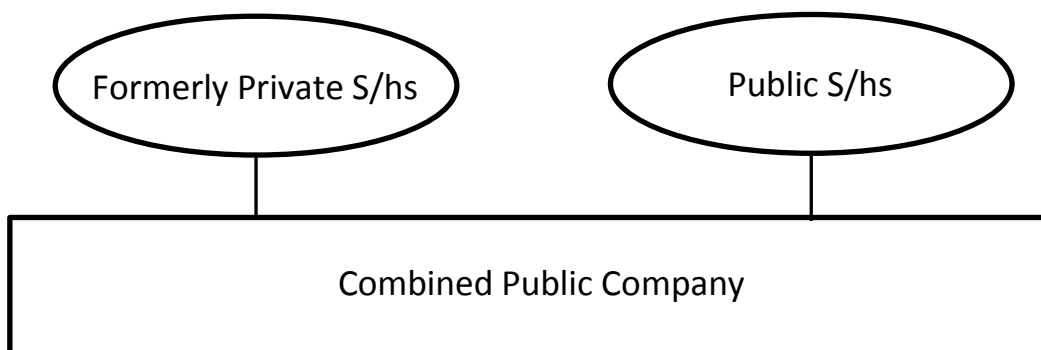
> "… comparative historical financial statements furnished for the "legal acquirer" should be those of the "legal acquiree" (*i.e.*, the "accounting acquirer"), with appropriate footnote disclosure concerning the change in the capital structure effected at the acquisition date."

Comparative financial statements for earlier periods should be consistent in order for them to be comparable to the post-acquisition financial statements. More specifically, in accordance with ASC 805-40-45, the financial statements should reflect: (1) the assets and liabilities of the accounting acquirer at their pre-combination carrying amounts and of the legal acquirer (according to ASC 805), (2) retained earnings of the accounting acquirer before the business combination, and (3) the equity structure of the legal acquirer including the shares issued to effect the transaction as an acquisition adjustment. Management retroactively adjusts the capital of the accounting acquirer to reflect the legal capital of the legal acquirer. The equity structure of the accounting acquirer is restated using the exchange ratio established in the acquisition agreement to reflect the number of shares of the legal acquirer issued in the transaction. See Appendix A for a detailed example.

Reverse mergers are often completed in conjunction with a PIPE financing, which is a private placement of shares wherein investors commit to purchase a certain number of shares from a company at a specific price. In turn, the company agrees to file a resale registration statement so that the investors can resell the shares to the public (SEC 2006).[11] The reverse merger transaction facilitates the company's ability to register the shares for resale.

Private firms have been using reverse mergers as an alternative to an IPO to access the capital markets since the 1950's (Adjei et al. 2008). Reverse mergers initially attracted SEC scrutiny due to fraud and perceived abuses of shareholders. The tightening of the securities laws surrounding reverse mergers has made them a promising vehicle to take small companies public Nahoum (2007). However, not all reverse mergers are completed by small firms. For example, the New York Stock Exchange (NYSE) became a for-profit corporation and began trading publicly on its own stock exchange after completing a reverse merger with Archipelago Holdings on March 7, 2006. The $9 billion transaction paved the way for the company to have the capability to not only trade stocks listed at the NYSE, but also Nasdaq-listed and over-the-counter stocks through Archipelago's electronic trading system. The deal also increased the exchange's market share in exchange-traded funds and derivatives trading (USA Today 2006).

Similarly, media mogul Ted Turner acquired, through a reverse merger, the once publicly traded Rice Broadcasting (WJRJ-TV) in Atlanta (Turner Hughes 2012). Other firms that have completed reverse mergers include: Texas Instruments Inc., Occidental Petroleum, Blockbuster Entertainment, Tandy Corp. (Radio Shack), Jamba Juice, and Berkshire Hathaway Inc.

2.2 Prior Literature

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[11] Instead of registering the shares, the company may leave the shares unregistered in which case the shares would be subject to the holding period of Rule 144 before resale.

Reverse mergers have outpaced IPOs in recent years. From 2005 to 2011, the average number of IPOs completed per year in the U.S. was 102 (Ritter 2012) while the average number of reverse mergers completed per year was 217 (See Figure 2 for annual figures). The increased frequency of reverse mergers has spurred research in this area.

Using a sample of 121 reverse merger transactions from 1987 to 2001, Gleason et al. (2005) find that, on average, the public shell firms are unprofitable prior to the reverse merger and shell shareholders receive wealth gains upon the announcement of the reverse merger. Gleason et al. (2005) suggest that these transactions provide shell shareholders a way to recover some of their investment yet claim that reverse merger firms are risky and may fail to generate long-term wealth because only 46% of the sample firms survive two years after the merger. In contrast, 73% of reverse merger firms in my sample survive at least two years after the merger.

Floros and Sapp (2011) study the trading performance of 585 shell companies during the period from 2006 to 2008. Approximately half of their sample is comprised of shell companies that found a suitor and performed a reverse merger, while the remaining portion of their sample continued as shell companies. The authors find a three-month abnormal return of 48.1% after the consummation of a reverse merger, but find negative returns in the long term. In contrast, Gleason et al. (2008) examine IPOs and reverse mergers and find that they outperform their IPO counterparts in the short term and exhibit comparable performance three years following going public, even though reverse mergers exhibit different characteristics at the time of going public (e.g., they are less profitable, and have a greater likelihood of financial distress).

A number of studies compare the characteristics of reverse mergers to IPOs. Adjei et al. (2008) examine the determinants and survival rates of reverse mergers and IPOs. Using a sample of reverse mergers between 1990 and 2002, they match each reverse merger to ten IPOs

Figure 2: Number of Reverse Mergers and IPOs by Year
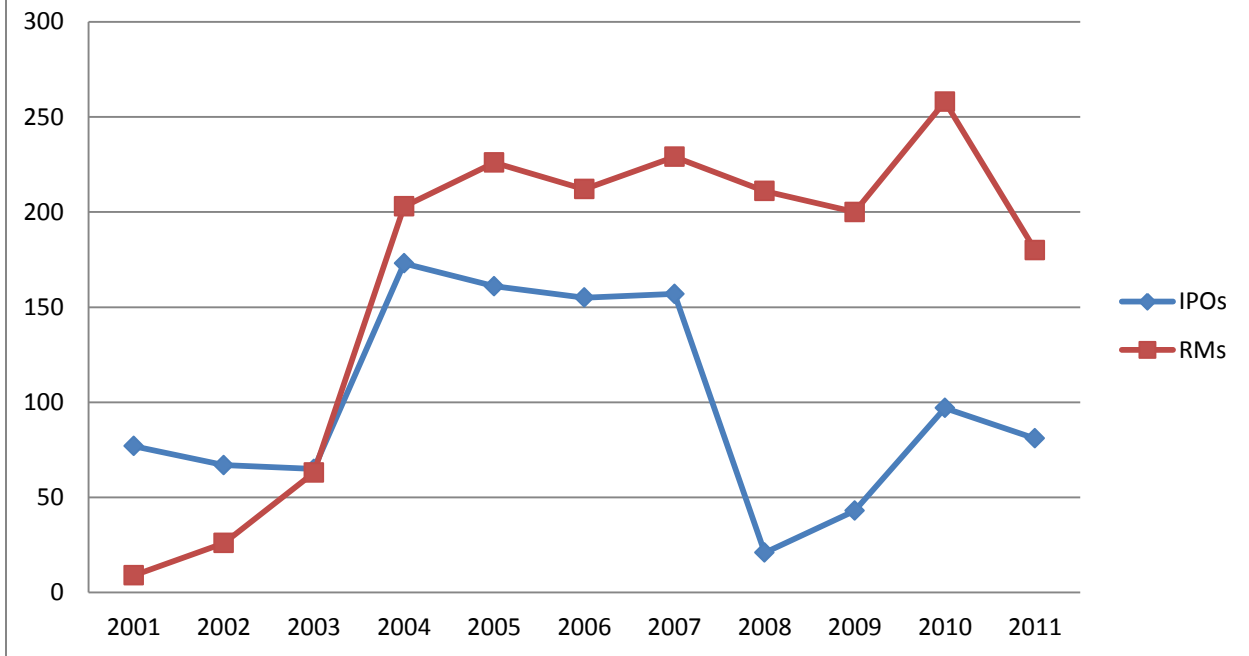
IPO figures were determined from IPO statistics compiled by John Ritter. See Table 6 of his report at http://bear.warrington.ufl.edu/ritter/IPOs2011Statistics042012.pdf

based on industry, listing exchange, and time. They find that reverse merger firms are smaller, younger, have lower return on assets on average than IPO firms, and delist more frequently within the first three years. In contrast, Wey (2012) reports that more Chinese firms that went public via IPOs in the U.S. in 2011 have been delisted than those that went public via a reverse merger.

A separate line of literature examines the going-public decision. Carpentier et al. (2012) evaluate the going-public decision in the context of Canada. Their choice of Canada is used to highlight the difference in the Canadian listing requirements between IPOs, which tend to be very stringent, and reverse mergers, whose requirements are more opaque and in some ways undefined. They find that the choice of listing method and regulation strictness is associated with the value and long-run performance of newly listed firms. Their results are consistent with theories suggesting that a firm's commitment to a stricter regulatory oversight lowers the information asymmetry component of the cost of capital, reducing the heteroegeneity of expectations and mispricing (Healy and Palepu 2001).

2.3 Contemporaneous Literature

Recently researchers have begun to study Chinese reverse mergers. Lee et al. (2013) examines whether the initial financial health of Chinese reverse merger firms and their subsequent financial performance is different than matched U.S. reporting firms and U.S. reverse merger firms. They find that Chinese reverse mergers have a higher survival rate and stronger future performance as measured by Return on Assets (ROA) and Cash from Operating Activities (CFO) than U.S. reverse merger firms. I find similar results; however, I focus on the financial reporting quality of reverse merger firms, a key concern for regulators. After all, even in the case

of well-performing firms, poor financial reporting quality could adversely affect a subset of investors by making it more difficult to evaluate the risk-return tradeoffs.

Givoly et al. (2012) use the Chinese reverse merger setting to study whether convergence to U.S. GAAP by foreign firms makes reporting quality equal to that of domestic firms. Using the mean absolute value of total accruals, discretionary accruals, the measurement error of accrual models, earnings management (Leuz et al. 2003), timely loss recognition, and the relevance of earnings as proxies for reporting quality, they find reverse merger firms exhibit lower reporting quality than matched U.S. firms and Chinese reverse merger firms exhibit lower reporting quality than other reverse merger firms.

There are a number of sample selection and research design differences between my study and Givoly et al. (2012) that could affect the inferences as well as the generalizability of the results. First, Givoly et al. (2012) cover a longer sample period (1992-2010) than this study and other contemporaneous literature, but exclude reverse merger firms that are traded on the OTCBB. While this enables the authors to focus on larger firms that are more commonly studied in the literature, it eliminates nearly 90% of all reverse merger firms (Lee et al. 2013). This makes it difficult to generalize their findings to the broad sample of reverse merger firms. In order to appropriately assess how earnings quality varies with the method for going public, I include all reverse merger firms in my study similar to Lee et al. (2013).

Second, Givoly et al. (2012) match each reverse merger firm-year observation to a U.S. domestic control firm-year observation with the same two-digit SIC code and then by size. One concern with this matching strategy is that it could result in each reverse merger firm being matched to multiple different control firms over the sample period. Given that the manipulation of accruals would correct itself in subsequent years, changing the control firm by matching on

firm-year observations could contaminate results that are typically measured within the same control firm over time. Another concern is that the control firms are likely in a different stage of their firm life than a reverse merger firm that is just entering capital markets. Because firms at different stages can exhibit different accrual patterns (Anthony and Ramesh 1992; Myers et al. 2003), this could also affect results. In contrast to Givoly et al., I match reverse merger firms to IPO firms that are also entering capital markets and keep the control firm consistent over the life of the sample period. This enables me to properly measure accrual patterns and the life cycle of the firm. A final concern with this matching strategy is that there are several factors that drive a firm's decision to access capital market's via a reverse merger, in addition to industry and size (Carpentier et al. 2012; Adjei et al. 2008). As I discuss in detail in Section 5 below, I use a propensity score technique and match reverse mergers firms to IPO firms on a variety of covariates that have been shown to be determinants of the reverse merger decision. I also control for other factors in my regressions such as firm life cycle, stock exchange, and growth in order to address factors that could affect differences in reporting quality.

Third, Givoly et al. (2012) use a research design choice of inserting dichotomous variables to identify the effect of a particular set of firms on reporting quality. While this method attempts to identify the treatment effect on a particular subset of firms, it also makes the assumption that the marginal effects of all the covariates are the same across the treatment and control firms. This is a strong assumption given that research has identified these firms to be very distinct. Thus in this study, I use approximate randomization (Noreen 1989; Barth et al. 2008; Dichev and Tang 2008; Minnis 2011) to avoid having to make such an assumption.

Another contemporaneous study, Chen et al. (2012), compares the financial reporting quality of Chinese reverse merger firms to various control groups (matched U.S. firms, Chinese

IPOs, Chinese ADRs, Chinese cross listed firms). Chen et al. (2012) proxy for financial reporting quality using discretionary and absolute accruals (Dechow et al. 1995; Dechow and Dichev 2002), discretionary revenue (McNichols and Stubben 2008; Stubben 2010), the ratio of absolute accruals to cash flows (Burgstahler et al. 2006), and the number of restatements. Overall, they find lower financial reporting quality at Chinese reverse merger firms relative to control groups.

The research design Chen et al. (2012) employ has some of the same limitations as the research design in Givoly et al. (2012). For example, similar to Givoly et al. (2012), Chen et al. (2012) assume that the marginal effects of the covariates are equal across the different control firms and choose control firms based on just year, industry, and size.

In addition, it is not clear whether the research design in Chen et al. (2012) appropriately addresses endogeneity concerns. Specifically, when comparing Chinese reverse merger firms to other Chinese firms, the authors employ a two-stage Heckman technique to control for self-selection. The results indicate little to no significance on the inverse mills ratio in the second stage. This is consistent with self-selection not playing a role in firms' choice of the method to go public or a misspecified selection model. However, prior research (Carpentier et al. 2012; Adjei et al. 2008) as well as the results of my propensity score match technique suggest otherwise. Given these differences in research design, it is perhaps not surprising that the results in Chen et al. (2012) contrast with my results.

Finally and more importantly, while Chen et al. (2012) limit their attention to relative reporting quality at Chinese reverse merger firms, I adopt a broader approach that assesses relative reporting quality at all reverse merger firms and demonstrate that the reporting quality issues are not driven by Chinese firms entering U.S. capital markets.

3. Hypothesis Development

3.1 Hypothesis Development

While increasing in frequency, regulators have expressed significant concern over reverse mergers. In March 2001, the SEC issued interpretive guidance regarding the proper accounting and reporting of reverse mergers. Further, in July 2005, the SEC adopted rules and rule amendments for shell companies and reverse mergers.[12] Next, the SEC presented common financial reporting issues related to reverse mergers at the Forums on Auditing in the Small Business Environment hosted by the Public Company Accounting Oversight Board in December 2009. Finally, in June 2011 the SEC issued Bulletin 2011-123 warning investors of potential risks. Despite the concern of regulators, there is no systematic evidence to support claims that these companies have lower quality accounting information than IPO companies. The purpose of this study is to empirically test this assertion.

As I discuss in Section 2.2, prior literature suggests that the characteristics of reverse merger and IPO firms differ prior to going public. Despite these differences, ex-ante it is not evident whether the quality of financial reporting will be higher for firms that access the capital markets via a reverse merger relative to IPO firms. The investor base of reverse mergers could affect the demand for high quality information. Reverse merger firms typically receive an exemption from registration under Rule 506 of Regulation D, which requires investors to be accredited or at least meet sophistication requirements. Additionally, if the reverse merger is completed in conjunction with a PIPE financing, PIPE investors are required to meet the same accreditation and sophistication requirements according to Rule 506.

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[12] Some of the rule and rule amendments include a(n): 1) revision of the definition of a "shell company", 2) addition of a check box to the company's annual and quarterly filings to identify shell companies filing those forms, 3) requirement for shell companies to report on Form 8-K the transactions causing them to cease being shell companies and 4) requirement that the Form 8-K is to be filed within four business days of the transaction instead of the previous 71-day "window" for filing the required financial information.

Accredited investors may have bargaining power and sophistication to demand information (Friedman 1994). Dye (1998) finds the threshold level determining whether the firm withholds or discloses information uniformly declines in the probability that investors are informed. Healy and Palepu (2001) argue that demand for quality financial reporting arises from information asymmetry and agency conflicts between managers and investors. Finally, some empirical literature proxy information asymmetry by the degree of investor sophistication among the firms' investor base (Callen et al. 2006). Thus, reverse merger firms may display higher quality reporting due to the demand from its accredited investors.

Reverse mergers can be completed regardless of the surrounding market conditions. The public shell and private operating companies can reach a deal despite poor market conditions as any PIPE financing associated with the transaction is prearranged. Additionally, in reverse mergers that are completed without a PIPE financing, very few shares, if any, are distributed to the public.

In contrast, IPOs are cyclical (Ibbotson and Jaffe 1975; Ibbotson et al. 1988; Lowry and Schwert 2002). Much of the success of an IPO is determined by the market conditions at the time of the filing. Economic downturns, lack of public confidence, and other factors could terminate an IPO before its completion, even after the firm has incurred substantial costs. For example, Boise Cascade, an Idaho based paper and wood company, pulled its highly-anticipated $400 million offering in May of 2005 before completion. The company cited adverse market conditions as the motivation for pulling the deal. Kozmo and GoDaddy.com also cited poor market conditions when pulling their IPOs before completion. It is therefore not surprising that during the financial crisis of 2008 while reverse mergers maintained a similar frequency, IPOs decreased by 86% from the prior year while, see Figure 2.

Market conditions could not only affect the completion of an IPO, but also its reporting quality. Ali and Gurun (2009) find that reported accruals are greater during high investor sentiment periods. They suggest that managers exploit the greater overvaluation of accruals during high sentiment periods. If IPOs are cyclical and dependent on market conditions, and managers report higher accruals during high sentiment conditions then reverse mergers may exhibit higher accounting quality than their IPO counterparts.

Reverse merger firms receive less market visibility than IPO firms. Part of the IPO process involves hiring an investment banker to underwrite the firm's offering. The underwriter helps create a secondary market for the firm's shares and issues analyst reports to disseminate information to public markets. Without the support of a brokerage firm, market coverage is likely less for a reverse merger firm. After completing a reverse merger Techniscan Inc. disclosed the following in its Form 10-K, "…security analysts of major brokerage firms may not provide coverage for us." Additionally, IPO listings are also more likely to appear on larger exchanges such as the NYSE or NASDAQ. This increases the visibility of the firm compared to reverse merger firms which most likely list on the OTCBB and may struggle to obtain significant analyst following or market visibility. If less market visibility and analyst coverage leads to less pressure to meet targets, then reverse merger firms may have higher earnings quality.

The above arguments notwithstanding there are a number of reasons for reverse mergers to exhibit lower accounting quality. Perhaps most importantly, reverse mergers receive less oversight upon going public. IPO firms file a Form S-1 registration statement which is reviewed by the SEC. This filing includes detailed explanations of the services or products the firm provides, the risk factors associated with the firm's industry and operations, the intended use of the capital raised in the offering, as well as information about the firm's officers and directors,

among others. The firm is required to respond to the SEC's comments and file amended Form S-1 registration statements (Nahoum 2007). This process allows regulators to review the firm's financial statements prior to going public. Reverse merger firms are still required to file audited financial statements with the SEC after the merger is completed; however, the merger is completed with virtually no regulatory interference.

Firms undertaking an IPO hire an investment banker to act as the underwriter, who helps the firm draft a prospectus, a document that provides the details of the offering to potential investors. Underwriters also purchase all the public shares at a predetermined price and then resell them to the public. Given their role in creating a secondary market, underwriters perform their own due diligence on the IPO firm. Reverse merger firms avoid hiring an underwriter as the shares issued in the merger receive an exemption from registration. Therefore, reverse mergers do not experience the increased scrutiny an underwriter provides.

Reverse merger firms also avoid any oversight associated with going on a roadshow presentation, which is a process whereby the firm and its underwriters travel to inform potential investors about their securities in face-to-face discussions. That reverse merger firms are able to avoid to a large extent the scrutiny of regulators and underwriters prior to going public, may result in lower earnings quality relative to IPO firms.

Furthermore, a reverse merger can be completed relatively quickly which leaves less time for individuals outside the firm to perform due diligence (Aguilar 2011). The IPO process (underwriting, preparing a prospectus, filing registration statements, putting on a roadshow, etc.) may take up to a year and a half to complete (Gleason et al. 2008). During this period, regulators, underwriters, and investors have the opportunity to perform due diligence. In contrast, reverse mergers can be completed in as little as a few weeks and typically take no

longer than four months (Feldman 2006).[13] That investors and regulators have less time to perform due diligence and evaluate disclosures, may result in lower earnings quality.

Finally, firms performing reverse mergers avoid potential legal liabilities associated with securities regulation. The 1933 Securities Act focuses on primary market transactions, such as an IPO. Under Section 11 of the 1933 Securities Act, a purchaser of a security may bring legal action against certain parties in a registered offering when false or misleading information is included in the registration statement.[14] Further, the plaintiff need only demonstrate a material misstatement or omission. Liability against the issuer is virtually absolute, even for innocent misstatements, and the firm bears the burden of demonstrating due diligence. Milev et al. (2010) report that the median settlement value of securities class action filings hit an all-time high in 2010. Further, average settlement values have shown an increasing trend from 1996 to 2010, see Figure 3. For example, Vonage Holdings Corp. completed its IPO on May 24, 2006 at $17 per share. Within seven trading days, the firm had lost about 30% of its value. Shareholders immediately filed a class action lawsuit under the 1933 Securities Act. In its complaint, law firm Motley Rice alleged that the company, its management, and underwriters had published a materially false and misleading registration statement and prospectus. Less than two weeks later, a second class action lawsuit was filed alleging that the company had failed to disclose and misrepresented materially adverse facts.

In contrast, shares issued in a reverse merger are exempt from registration. Typically, firms rely on Rule 506 of Regulation D under the Securities Act of 1933 for an exemption (Sjostrom 2008). As I discuss above, under Rule 506, investors must be accredited or meet

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[13] In a study of reverse mergers and a matched sample of IPOs, Floros and Shastri (2006) report a mean duration of 92 days for reverse mergers and 287 days for IPOs.

[14] Per § 11 a purchaser of a security may bring action against every person that signs the registration statement, every director, accountant, engineer, appraiser, and underwriter.

Figure 3: Average Settlement Value (Millions) of Securities Class Action Lawsuits
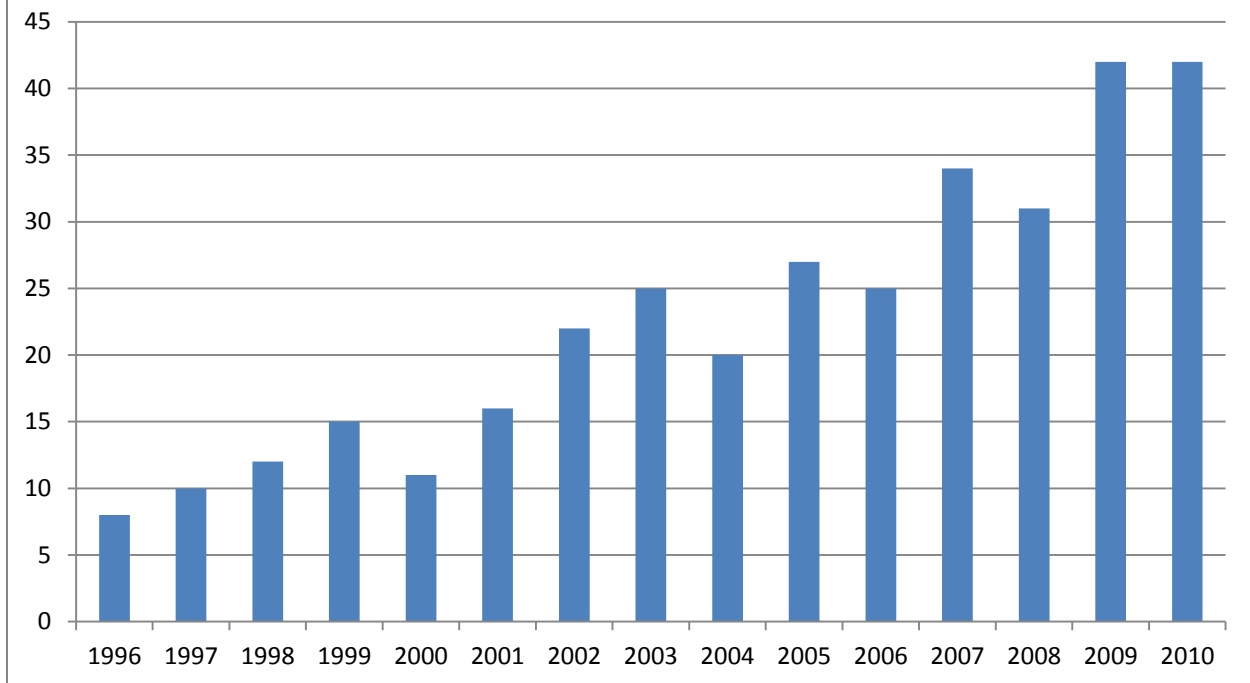
Statistics were obtained from Figure 17 of NERA Economic Consulting's report titled, "Trends 2010 Year-End Update Securities Class-Action Filing Accelerate in Second Half of 2010; Median Settlement Value at an All-Time High." Average settlement values greater than one billion and IPO laddering allegations filed mostly in 2001 were excluded from the statistics. Dollar figures were adjusted according to the Consumer Price Index to eliminate any trends due to inflation.

sophistication requirements.[15] While both IPO and reverse merger firms are subject to potential shareholder lawsuits under the Securities Act of 1934 in years subsequent to entering the market, reverse merger firms are effectively immune from litigation under the 1933 Act.[16] This lower litigation threat could lead to decreased earnings quality for reverse merger firms.

As described earlier, there exist several reasons that earnings quality of reverse mergers could be higher or lower than IPOs. As such, I make no directional predictions.

4. Sample Description and Measurement of Earnings Quality

4.1 Sample Description

I obtained a proprietary database from DealFlow Media containing 1,825 reverse merger transactions from January 1, 2001 to December 31, 2011. Next, I use the SDC Platinum U.S. New Issues database to identify IPOs during the same time period. After merging the data with Compustat's Fundamentals Annual and Securities Monthly files and eliminating firm-year observations without sufficient data to calculate measures of earnings quality, my final sample contains 440 reverse merger transactions with 1,693 firm-year observations and 1,739 IPOs with 8,794 firm-year observations.

Firm-year observations are included beginning in the year of the reverse merger or IPO, identified as year *t*. I recognize that both the IPO and reverse merger firms likely had operations prior to going public; however, this data is not equally available for both sets of firms. For

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[15] Under Rule 506, a firm may raise an unlimited amount of capital but the total number of purchasers is limited to 35; however, accredited investors, corporations, and others are exempt from the calculation of the total number of purchasers according to Rule 501(e). All investors must meet sophistication requirements as having "…such knowledge and experience in financing and business matters that he is capable of evaluating the merits and risks of the prospective investment."

[16] Given the significant increase in securities class action lawsuits in the past decade and the firm's increased exposure to litigation under the 1933 Securities Act, the threat of shareholder lawsuits can be a strong incentive for selecting a reverse merger. The burden of demonstrating due diligence is distinct between the 1933 and 1934 Acts. As mentioned previously the firm bears the burden of demonstrating due diligence under the 1933 Act while under the 1934 Act the shareholders bear burden of demonstrating misconduct. As such, the burden is much greater on the firm to defend itself under the 1933 Act, which could be a strong incentive for a firm to enter the market through a reverse merger.

example, IPO firm data are typically backfilled in Compustat, thus providing data for years prior to the IPO (*t-1, t-2*). On the other hand, reverse merger firm data in Compustat are maintained differently. As I describe in Appendix A, prior to the reverse merger, the public shell company filed financial statements, which are reported in Compustat. While the historical financial statements become those of the operating company (accounting acquirer) after the reverse merger is completed, the combined entity is a legal continuation of the shell company. Thus, Compustat does not backfill years *t-1, t-2*, etc. with the historical accounting information of the operating company. As I am interested in the measures of earnings quality for the operating company, not the shell, I start my analysis for both IPO and reverse merger firms with year *t* in order to be consistent. Additionally, for the measurement of variables from reverse merger firms in year *t*, I obtain lagged values. In the firm's initial filing with the SEC after completing the reverse merger, comparative financial statements from the prior year is presented, thus giving me complete audited financial statements of the reverse merger firm for the year prior to going public. As such, I hand collect the data for the year prior to going public from the firms' audited financial statements. By hand collecting financial statement data for reverse merger firms for the year prior to going public, I scale the variables using the lagged values of the operating private company and not the shell (as reported in Compustat, see Appendix A). See Table 1 Panel A for breakdown of the firm-year observations relative to the year of going public. Table 1 Panel C shows the distribution of reverse merger firms by industry (2-Digit SIC Code) as well as the distribution of all Compustat firms. They exhibit similar distributions with the exception of more reverse merger firms (as a percentage of total firms) for Chemical and Allied Products and Electrical Equipment.

Table 1 Descriptive Statistics

Panel A: Firm year observations

Year	Reverse Merger	IPO
t	440	1,739
t+1	385	1,496
t+2	323	1,299
t+3	239	1,159
t+4	152	928
t+5	89	712
t+6	41	553
t+7	19	367
t+8	5	277
t+9	0	167
t+10	0	91
t+11	0	6
	1,693	8,794

Panel B: Firm Descriptive Statistics

Reverse Mergers

	Mean	Median	Std Dev
Growth	0.96	0.27	2.53
Accruals	-0.13	0.01	1.06
Size	54.51	17.68	102.85
Current Ratio	3.09	1.47	4.59

IPOs

	Mean	Median	Std Dev
Growth	0.30	0.14	1.05
Accruals	0.00	0.00	0.17
Size	3,918.38	359.86	27,723.41
Current Ratio	4.00	2.56	4.40

Growth is calculated as Sales in year t less Sales in year t-1 divided by Sales in year t-1.
Accruals is calculated as total current accruals as in Equation 1. Size is calculated as
total assets. Current Ratio is calculated as current assets divided by current liabilities.

Table 1 Descriptive Statistics

Panel C: Distribution of Reverse Mergers by Industry					
2 Digit SIC		Reverse Mergers		Compustat	
13	Oil and Gas	23	5.23%	516	4.67%
20	Food and Kindred Products	18	4.09%	183	1.65%
28	Chemicals and Allied	81	18.41%	872	7.88%
35	Machinery and Computer	16	3.64%	385	3.48%
36	Electrical Equipment	43	9.77%	667	6.03%
38	Measuring Instruments	12	2.73%	496	4.49%
48	Communications	10	2.27%	360	3.26%
49	Electric and Gas Services	10	2.27%	416	3.76%
51	Wholesome Trade	11	2.50%	96	0.87%
65	Real Estate	10	2.27%	122	1.10%
73	Business Services	53	12.05%	1,075	9.72%
Other	42 Different 2-Digit SIC	153	34.77%	5,871	53.09%
		440	100%	11,059	100%

4.2 Measurement of Earnings Quality

I evaluate both accounting-based and market-based earnings attributes often associated with earnings quality as in Francis et al. (2004), among others. Below I discuss the various measures I utilize.

Accrual Quality

Reported earnings is a function of the firm's financial performance during the period. The accounting system converts the firm's unobservable financial performance into observable earnings (Dechow et al. 2010). Observable earnings is thus a combination of performance and the accounting system, which involves the measurement of accruals. Normal accruals reflect adjustments to reveal fundamental performance, while discretionary/abnormal accruals reflect distortions induced by the application of accounting rules or earnings management (Dechow et al. 2010).

Prior literature measures accrual quality by modeling the accrual process (Jones 1991; Dechow et al. 1995; Dechow and Dichev 2002; Hribar and Collins 2002; McNichols 2002; Francis et al. 2005; Kothari et al. 2005). As in Francis et al. (2004), I follow Dechow and Dichev (2002), and measure accruals as a function of past, present, and future cash flows. The discretionary portion of current accruals is measured as the residual ($\varepsilon_{p,j,t}$) from the following regression:

$$TCA_{p,j,t} = \beta_{0,p} + \beta_{1,p}CFO_{p,j,t-1} + \beta_{2,p}\,CFO_{p,j,t} + \beta_{3,p}CFO_{p,j,t+1} + \beta_{4,p}\Delta Sales_{p,j,t}$$

$$+ \;\beta_{5,p}PPE_{p,j,t} + \;\varepsilon_{p,j,t} \tag{1}$$

where all variables are scaled by lagged total assets (Compustat #6) and:

$TCA_{p,j,t}$	= Firm j's total current accruals in year t under going public method p, = $\Delta CA_{j,t}$ − $\Delta CL_{j,t}$ - $\Delta Cash_{j,t}$ + $\Delta SDebt_{j,t}$
$\Delta CA_{j,t}$	= Firm j's change in current assets (Compustat #4) between year t-1 and year t
$\Delta CL_{j,t}$	= Firm j's change in current liabilities (Compustat #5) between year t-1 and year t

ΔCash$_{j,t}$	= Firm j's change in cash (Compustat #1) between year t-1 and year t	
ΔSDebt$_{j,t}$	= Firm j's change in debt in current liabilities (Compustat #34) between year t-1 and year t	
CFO$_{j,t}$	= Firm j's cash flow from operations in year t (Compustat#308)	
ΔSales$_{j,t}$	= Firm j's change in sales (Compustat #12) between year t-1 and year t	
PPE$_{j,t}$	= Firm j's property, plant and equipment in year t (Compustat#7)	

I define accrual quality as the standard deviation of the residual from equation 1 and measure it separately for IPO and reverse merger firms, *Accrual Quality$_p$ = σ(ε$_{p,j,t}$)*. Subscript *p* in all regressions refers to the method of going public – reverse merger or IPO. A larger standard deviation would be consistent with lower accounting quality given that the residual represents the abnormal component of earnings, a distortion of lower quality.[17]

Earnings Persistence and Predictability

Researchers use persistence as a summary measure for future performance. Firms with more sustainable earnings have a more reliable cash flow stream which is useful input for equity valuation (Kormendi and Lipe 1987; Collins and Kothari 1989; Easton and Zmijewski 1989). Given the SEC's warning that investors should, "look for reliable information," I evaluate the persistence and predictability of reported earnings, i.e. how strongly can investors of reverse merger firms rely on earnings as a measure of future performance. My measures are drawn from the following regression:

$$E_{p,j,t} = \beta_{0,p} + \beta_{1,p}E_{p,j,t-1} + \varepsilon_{p,j,t} \tag{2}$$

where all variables are scaled by lagged total assets (Compustat #6) and:

E$_{j,t}$ = Income before extraordinary items (Compustat #18) for firm j in year t

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[17] An alternative approach is to base comparisons on alternative metrics constructed using a time series of firm-specific data. Data limitations preclude this approach because of short lifespan of reverse merger and IPO firms in the sample. Further, it is unclear whether this approach would result in more accurate inferences because firm-specific estimates would be based on a small number of observations, limiting power and introducing estimation error (Barth et al., 2008).

Following Francis et al. (2004), I use as the estimated coefficient on the lagged earnings from equation 2, *Earnings Persistence* $= \beta_{1,p}$. Larger (smaller) values of the estimated coefficient are consistent with more (less) persistent earnings. Also consistent with Francis et al. (2004), I measure earnings predictability as the standard deviation of the residual from equation 2, *Earnings Predictability* $= \sigma(\varepsilon_{p,j,t})$. Large (small) values of *Predictability* imply less (more) predictable earnings.

Cash Persistence and Predictability

Accounting standard setters establish and improve standards of financial reporting and create measures of income that better predict future cash flows. Barth et al. (2001) provide evidence consistent with standard setters' assertion that knowledge of the components of earnings is important in predicting future cash flows. Investors should be concerned with firms' ability to consistently generate operating cash flow. Given that newly public firms are often relatively young in their life cycle and likely entered the market with the intent to raise capital, I investigate the persistence and predictability of their operating cash flows. I estimate the following regression separating past earnings into past cash flows and accruals[18] (Gordon et al. 2010):

$$CFO_{p,j,t} = \beta_{0,p} + \beta_{1,p}CFO_{p,j,t-1} + \beta_{2,p}ACC_{p,j,t-1} + \varepsilon_{p,j,t} \qquad (3)$$

where all variables are scaled by lagged total assets (Compustat #6) and:

$ACC_{j,t-1}$ = Income before extraordinary items (Compustat #18) in year *t-1* less cash from operations (Compustat #308) in year *t-1*

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[18] Given that accruals and cash flows have been found to be highly negatively correlated, parameter estimates could be unstable. Parameter estimates are unbiased but small changes in the sample composition could cause changes in parameter estimates. Model 3 attempts to test the persistence of cash and results are robust to the inclusion or exclusion of lagged accruals in the model.

Similar to the previous tests I use $\beta_{1,p}$ as a measure of *Cash Persistence*. Larger (smaller) values of the estimated coefficient are consistent with more (less) persistent cash flows. I measure cash predictability as the standard deviation of the residual from equation 3, *Cash Predictability = $\sigma(\varepsilon_{p,j,t})$*. Large (small) values of *Predictability* imply less (more) predictable cash flows.

Earnings Smoothness

Prior literature has suggested that earnings smoothness is a desirable earnings property. Standard setters have chosen an accrual-based system with the assumption that it provides a clearer indication of the fundamental performance of the firm. Tucker and Zarowin (2006) conclude that smoother earnings are associated with greater earnings informativeness. I measure earnings smoothness consistent with Leuz et al. (2003) and Francis et al. (2004) as defined by the ratio of the standard deviation of earnings to the standard deviation of cash flows, *Earnings Smoothness = $\sigma(NI_{p,t})$ / $\sigma(CFO_{p,t})$*. Both variables are scaled by lagged total assets.

Conservatism and Timeliness

Conservatism is the differential verifiability required for recognition of profits versus losses. Less formally, it is reflecting 'bad news' more quickly than 'good news.' Ball et al. (2000) and Leuz (2003) suggest that a characteristic of higher quality earnings is when losses are recognized as they occur rather than deferred to future periods. Watts (2003a, 2003b) also argues that conservative earnings is a desirable earnings property due to its implications for contracting, shareholder litigation, and accounting regulation. The U.S. SEC has expressed concern over the transparency of reverse mergers. As such, I evaluate accounting conservatism and timeliness. I follow the reverse earnings-return regression from Basu (1997) to measure conservatism:

$$NI_{p,j,t} = \beta_{0,p} + \beta_{1,p}NEG_{p,j,t} + \beta_{2,p}RET_{j,t} + \beta_{3,p}NEG_{p,j,t} * RET_{j,t} + \varepsilon_{p,j,t} \qquad (4)$$

where:

$NI_{j,t}$ = Income before extraordinary items (Compustat #18) for firm j in year t
                     scaled by lagged market value of equity
$NEG_{j,t}$ = Dichotomous variable equal to one if $RET_{j,t}$ is negative
$RET_{j,t}$ = Firm j's 12-month return ending four months after fiscal year t.

Prior literature measures conservatism as the sign and magnitude of the coefficient estimate on the interaction term in equation 4, *Conservatism* = $\beta_{3,p}$. More timely loss recognition is indicated by a larger, positive and significant coefficient. My measure of timeliness is the adjusted R^2 from equation 4, *Timeliness* = R^2_p. Larger values of Timeliness are consistent with more timely earnings.

Prior research has identified factors that potentially impact accounting conservatism measures. Barth et al. (2008) discusses the possibility that changes in accounting quality could be driven by a change in firm incentives. Therefore, as a robustness check, I include the leverage ratio as firms with more debt obligations/covenants may have different incentives with respect to timely loss recognition (Watts, 2003a). Growth firms could also have different incentives that could impact the results of tests. Thus I include market-to-book ratio to control for the effect of the beginning composition of equity value on future asymmetric timeliness (LaFond and Roychowdhury, 2008). Results are not affected by the inclusion or exclusion of these variables.

Relevance

Value relevance of accounting information is commonly defined as how well accounting amounts reflect information used by equity investors. In other words, an accounting amount is defined as value relevant if it has a predicted association with equity market values. I consider more value relevant accounting information to be of higher quality to investors than less value relevant accounting information. Given their stern warning about investing in reverse merger

companies, regulators should be interested in how reported earnings is used by investors. Following Francis et al. (2004), I estimate the following regression:

$$RET_{j,t} = \beta_{0,p} + \beta_{1,p}NI_{p,j,t} + \beta_{2,p}\Delta NI_{p,j,t} + \varepsilon_{p,j,t} \qquad (5)$$

Where variables are as previously defined and:

$\Delta NI_{j,t}$ = The change in income before extraordinary items (Compustat #18) for firm *j* from year *t-1* to year *t,* scaled by the firm's market value at the end of year *t-1*

    I measure value relevance as the explanatory power of the above regression under the two different going public methods, Relevance = R^2_p. Larger (smaller) values of Relevance imply more (less) value relevant earnings.

    Finally, I include a brief description of common controls that are included in each of the regressions described previously. Prior literature finds that accruals and a firm's life cycle are correlated (Anthony and Ramesh 1992; Myers et al. 2003). The greatest structural changes to the firm are likely to occur in the first year of the merger or IPO and can cause extreme accruals and unstable earnings patterns. As such, I control for relative year in the firms' public life cycles in each of the following regressions. Next, some prior literature suggests that Big 4 auditors provide higher-quality audits than non-Big 4 auditors (DeAngelo 1981; Palmrose 1988; Becker et al. 1998; Khurana and Raman 2004). As such in each of the regressions, I include a dichotomous variable equal to one for firm-year observations that were audited by a Big 4 auditor and zero otherwise. Finally, to statistically compare metrics between two samples, I follow prior research (Lang et al. 2003; Lang et al. 2006; Barth et al. 2008, Minnis 2011).

5. Empirical Results

5.1 Main Findings

I document in Table 2 the earnings attributes for the full sample of reverse merger and IPO firms. I recognize that the full sample results represent a non-random sample due to the managers' ability to choose the method to go public. As such, I cannot view these preliminary results as causal and will address it in subsequent tests. Panel A contains the results of accounting-based earnings attributes and I find that earnings of IPO firms are of higher quality than those of reverse merger firms, as proxied by the earnings attributes described above. In the model measuring accrual quality, I find that IPO firms exhibit higher quality accruals than reverse mergers firms as indicated by a smaller standard deviation of discretionary accruals. Earnings appear to be more persistent for IPO firms as evidenced by a larger coefficient on lagged earnings from equation 2. IPO earnings also appear to be more predictable than earnings from reverse merger firms. Similar results are found for the persistence of cash and its predictability. Finally, IPO firms exhibit smoother earnings than reverse merger firms.

In Table 2 Panel B, I present the results of market-based earnings attributes. Results indicate that IPO firms' earnings are more conservative and timely. In my tests of the value relevance of earnings, I find a higher R^2 for IPO firms than for reverse merger firms indicating the earnings are more relevant to shareholders.

The above tests are simply a comparison of results from non-nested distributions, thus I cannot make any conclusions about statistical significance. As such I perform a bootstrapping technique to simulate the empirical distribution of the test statistic (Noreen 1989; Barth et al. 2008; Dichev and Tang 2008; Minnis 2011). Minnis (2011) notes that this technique does not require making any parametric assumptions regarding the distribution of each test statistic. Thus

Table 2 Earnings Quality – Full Sample

Panel A

Accounting-based Attributes	Reverse Merger	IPO	Difference
Accrual Quality	0.72	0.15	-0.57***
			(0.00)
Earnings Persistence	0.33	0.43	-0.10
			(0.18)
Earnings Predictability	5.32	0.91	-4.41***
			(0.00)
Cash Persistence	0.25	0.54	-0.29**
			(0.00)
Cash Predictability	1.65	0.28	-1.36***
			(0.00)
Earnings Smoothness	2.97	2.42	-0.55***
			(0.00)

P-Values are in parenthesis for the bootstrapped test results. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.

Accrual Quality is the standard deviation of the residual from the regression of accruals on future year, current year, and previous year's cash flows from operations. Earnings Persistence is the estimated coefficient on previous year's net income from a regression of current net income on previous year's net income. Earnings Predictability is the standard deviation of the residual from the Earnings Persistence regression. Cash Persistence is the estimated coefficient on previous year's operating cash flows from a regression of current operating cash flows on previous year's cash flows from operations and accruals. Cash Predictability is the standard deviation of the residual from the Cash Persistence regression. Earnings Smoothness is the standard deviation of net income scaled by lagged assets divided by the standard deviation of cash flows scaled by lagged assets. All continuous variables are winsorized at the top and bottom 1% to mitigate the effect of outliers.

Panel B

Market-based Attributes	Reverse Merger	IPO	Difference
Conservatism	5.41	11.01	-5.60
			(0.62)
Timeliness	0.04	0.10	-0.06***
			(0.00)
Relevance	0.02	0.10	-0.08***
			(0.00)

P-Values are in parenthesis for the bootstrapped test results. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.

Conservatism is measured as the t-stat of the coefficient on the interaction term, NEG*RET, in a regression of net income on a dichotomous variable equaling one if the company's annual return is negative and zero otherwise, the company's annual return, and the interaction of the dichotomous variable (NEG) and the company's annual return (RET). Timeliness is the adjusted R squared from the Conservatism regression. Relevance is the adjusted R squared from a regression of annual returns on net income and change in net income. All continuous variables are winsorized at the top and bottom 1% to mitigate the effect of outliers.

the technique is particularly appealing to this setting because of uncertainty whether: 1) The firms within each group are drawn from the same distribution and 2) The metrics for firms in different groups are potentially drawn from a different distribution. I describe how this procedure was used in my test of earnings persistence, noting that a similar procedure was repeated for all other tests.

The null hypothesis is that there is no difference in the persistence of earnings between the two groups of firms. First, I randomly assign firms to the reverse merger and IPO groups.[19] Using these observations I estimate a regression using equation 2:

$$E_{p,j,t} = \beta_{0,p} + \beta_{1,p}E_{p,j,t-1} + \varepsilon_{p,j,t} \tag{2}$$

Next, I record the coefficient, β_1, for both the reverse merger and IPO pseudo populations and calculate the difference between them. I note if the difference from the randomly generated sample is greater than the difference of 0.10 calculated from the true population (see Table 2 Panel A). I then repeat the procedure 10,000 times. The p-value is the number of times that the randomly generated populations result in a larger difference than the true population divided by the number of iterations. This method, referred to as "approximate randomization" (Noreen 1989), generates a distribution for the test statistic. I can observe how frequently random assignment of the treatment would generate an effect equal to or greater than the effect observed in the true population. After performing this bootstrapping technique, I find that the differences

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[19] My true population contains 440 reverse merger firms and 1,739 IPO firms. When bootstrapping, I randomly assign firms to the two respective groups in the same proportion as the original sample. For example, 20% of the original sample is reverse merger firms. As such, my pseudo populations are randomly assigned with 80% of the firms assigned to IPOs and 20% to reverse mergers.

noted in Table 2 are all statistically significant with the exception of Earnings Persistence and Conservatism.[20]

5.2 Self Selection

Managers choose whether and how to go public. Consequently, characteristics of the two groups of firms may differ, thus the assignment of the going public method is not random. Further, it is impossible to observe the counterfactual, i.e. earnings attributes for reverse merger firms after completing an IPO. Without randomization, it is not appropriate to infer causality of the treatment.

To mitigate this concern, I perform a propensity score match to estimate a counterfactual untreated observation (Rosenbaum and Rubin 1983).[21] While OLS uses all untreated observations equally, this technique gives more weight to untreated observations that are more similar to treated observations. Thus, I adjust selection models from prior literature (Carpentier et al. 2012; Gleason et al. 2008; Adjei et al. 2008) to develop a propensity score of the probability of completing a reverse merger. By matching on my propensity score, I assume that the treatment is as good as randomly assigned for firms with the same probability of receiving the treatment. To more accurately estimate the going public decision, I use firm data for the year prior to going public as described in Section 4.1 and estimate the following probit model:

$$\Pr(RM)_j = \beta_0 + \beta_1 Size_j + \beta_2 Cash_j + \beta_3 CurRatio_j + \beta_4 ROA_j + \beta_5 IND_j +$$

$$\beta_6 Intangible_j + \beta_7 R\&D_j + \beta_8 US_j + \varepsilon_{p,j,t} \tag{6}$$

where:

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[20] In addition to the bootstrapping technique, I also use an F-test to test the equality of the variances for: Accrual Quality, Earnings Predictability, and Cash Predictability. I find similar statistical differences as indicated by the bootstrapping technique.

[21] Matching was performed by using a one to one nearest neighbor match without replacement. Results are robust to other matching specifications.

Size   = 1/total assets (Compustat #6)
Cash   = Cash and short term investments (Compustat #1) divided by total assets
CurRatio   = Current assets (Compustat #4) divided by current liabilities (Compustat #5)
ROA   = Income before extraordinary items (Compustat #18) divided by total assets
IND   = Dichotomous variable equal to one if the firm is in oil & gas, biotech, or a high
               technology industry
Intangible   = Total intangible assets (Compustat #33) divided by total assets
R&D   = Total research and development expenses (Compustat #46) divided by total
               Assets
US   = Dichotomous variable equal to one if the firm's headquarters is in the U.S.

Prior research has indicated that reverse merger firms are smaller, more cash strapped, and less liquid (Carpentier et al. 2012; Gleason et al. 2008; Adjei et al. 2008). Therefore, I include proxies for size, cash, and liquidity. Prior research has also indicated that firm performance before going public could also affect the method used, as such, I include ROA to proxy for performance. If reverse mergers can be completed quicker, I would expect firms operating in high technology industries would have a greater incentive to get to capital markets more quickly. Additionally, prior literature has shown a higher frequency of reverse mergers performed in the oil and gas and biotech industries (Carpentier et al. 2012; Nahoum 2007). Thus, I include a dichotomous variable equal to one for firms in these industries. Next, investors in IPOs may be especially willing to invest in high growth firms (Poulsen and Stegemoller 2008). Further, Smith and Watts (1992) and Gaver and Gaver (1993) find that public firms with higher growth potential are more likely to use equity financing. In contrast, descriptive statistics in Table 1 Panel B show that after going public reverse merger experience stronger growth than IPO firms. I use the amount of intangible assets and research and development expenses as proxies for growth firms. Finally, approximately 13% of the sample IPO firms are located outside the U.S. while 23% of the reverse merger firms are not domestic.[22] Thus I include a

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[22] Percent of non-domestic reverse merger firms was calculated for the entire sample of reverse mergers, not just those reverse merger firms that have sufficient Compustat data to run empirical analysis.

dichotomous variable equal to one if the operating firm is headquartered in the U.S. See Table 3 for results of the model. While not all are statistically significant to the decision to perform a reverse merger, all variables have the predicted sign. Prior to going public, reverse merger firms appear to be smaller, hold less cash, are more concentrated in high-tech and oil and gas industries, and more likely to have headquarters outside the U.S. than IPO firms.

After matching on the firm's likelihood to select a reverse merger, I repeat the analysis with the reverse merger and matched counterfactual IPO firms, recognizing that inferences from the results as presented in Table 4 are subject to potential model misspecifications. I perform the same bootstrapping technique described above and find that after matching on firm characteristics that could affect the selected method to go public, reverse merger firms exhibit lower earnings quality. Results are consistent with the theory that not all methods used to go public are equal (Lang et al. 2003; Lang et al. 2006; Aguilar 2011).

5.3 Institutional Investors

In order to avoid registration of securities under the 1933 Act, investors in a reverse merger must be accredited or at least meet the following condition as described in Rule 506 of Regulation D:

"Each purchaser who is not an accredited investor either alone or with his purchaser representative(s) has such knowledge and experience in financial and business matters that he is capable of evaluating the merits and risks of the prospective investment, or the issuer reasonably believes immediately prior to making any sale that such purchaser comes within this description."

While investors in reverse mergers must meet these requirements, there is likely considerable variation in their investor bases. For example, Rule 501 of Regulation D defines an accredited investor to include among others 1) A person whose individual or joint net worth with that person's spouse, at the time of the purchase exceeds $1,000,000. 2) A person who had

Table 3 Determinants of reverse mergers

Variables	Predicted Sign	Coefficient
Size	+	1.11***
		(0.00)
Cash	-	-0.79***
		(0.00)
CurRatio	-	-0.00
		(0.79)
ROA	-	-0.08
		(0.17)
IND	+	0.30***
		(0.00)
Intangible	?	-0.60**
		(0.01)
R&D	?	-0.31***
		(0.00)
US	-	-1.46***
		(0.00)
Intercept		-0.05
		(0.53)
Pseudo R^2		0.45
Number of Observations		1,705

P-Values are in parenthesis. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.

Results are from a probit model with robust standard errors. The dependent variable is a dichotomous variable equal to one if the firm used a reverse merger and zero if it used an IPO. All independent variables are measured in the year prior to going public. Size is 1 divided by total assets. Cash is cash and cash equivalents divided by total assets. CurRatio is current assets less current liabilities. ROA is income before extraordinary items divided by total assets. IND is a dichotomous variable equal to one if the firm is an oil & gas,biotech, or technology firm. Intangible is the ratio of intangible assets to total assets. R&D is the ratio of research and development expenses to total assets.

Table 4 Earnings Quality - Propensity score matched

Panel A

Accounting-based Attributes	Reverse Merger	IPO	Difference
Accrual Quality	0.63	0.26	-0.37***
			(0.00)
Earnings Persistence	0.31	0.48	-0.17*
			(0.06)
Earnings Predictability	4.63	1.98	-2.65***
			(0.00)
Cash Persistence	0.16	0.47	-0.31***
			(0.00)
Cash Predictability	1.42	0.37	-1.05***
			(0.00)
Earnings Smoothness	2.99	3.33	0.34*
			(0.09)

P-Values are in parenthesis for the bootstrapped test results. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.

Accrual Quality is the standard deviation of the residual from the regression of accruals on future year, current year, and previous year's cash flows from operations. Earnings Persistence is the estimated coefficient on previous year's net income from a regression of current net income on previous year's net income. Earnings Predictability is the standard deviation of the residual from the Earnings Persistence regression. Cash Persistence is the estimated coefficient on previous year's operating cash flows from a regression of current operating cash flows on previous year's cash flows from operations and accruals. Cash Predictability is the standard deviation of the residual from the Cash Persistence regression. Earnings Smoothness is the standard deviation of net income scaled by lagged assets divided by the standard deviation of cash flows scaled by lagged assets. All continuous variables are winsorized at the top and bottom 1% to mitigate the effect of outliers.

Panel B

Market-based Attributes	Reverse Merger	IPO	Difference
Conservatism	3.59	4.34	0.75
			(0.22)
Timeliness	0.05	0.17	-0.12**
			(0.04)
Relevance	0.03	0.08	-0.05**
			(0.03)

P-Values are in parenthesis for the bootstrapped test results. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.

Conservatism is measured as the t-stat of the coefficient on the interaction term, NEG*RET, in a regression of net income on a dichotomous variable equaling one if the company's annual return is negative and zero otherwise, the company's annual return, and the interaction of the dichotomous variable (NEG) and the company's annual return (RET). Timeliness is the adjusted R squared from the Conservatism regression. Relevance is the adjusted R squared from a regression of annual returns on net income and change in net income. All continuous variables are winsorized at the top and bottom 1% to mitigate the effect of outliers.

individual (joint) income in excess of $200,000 ($300,000) in each of the two most recent years and has a reasonable expectation of reaching the same income level in the current year. 3) Banks. 4) Brokers or dealers registered pursuant to section 15 of the 1934 Act. 5) Insurance companies.

Institutional investors are organizations (banks, insurance companies, pension funds, hedge funds, and mutual funds) which pool large sums of money and invest in securities. They meet the requirements of an accredited investor while so does an individual with income in excess of $200,000. The financial reporting quality of reverse merger firms could be affected by the different makeup of accredited investors. For example, prior research suggests that institutional investors act as monitors. Given their increased incentives to monitor management (i.e., large shareholdings) and the ability to affect change through large voting blocks (Brickley et al., 1988; Parrino et al., 2003), these investors play an important role in corporate governance (Dikolli et al., 2000). Bushee and Noe (2000) find an association between higher disclosure quality and institutional ownership. Thus while it is unlikely that an individual investor could influence a firm's financial reporting, institutional investors may have bargaining power and sophistication to demand information (Friedman 1994). If this is true then a reverse merger firm with a larger percentage of institutional investors will exhibit stronger financial reporting quality than a reverse merger firm that has no institutional investors.

I obtain the percentage of shares owned by institutional investors from SEC Form 13f filings. First, I divide the sample of reverse mergers into quartiles based upon the institutional ownership percentage immediately following the reverse merger. Next I evaluate whether there is variation in earnings quality among reverse mergers by testing the difference between the

bottom and top quartiles.[23] Untabulated results indicate that reverse mergers from the top quartile have statistically higher earnings quality than the bottom quartile based on Accruals Quality, Earnings Predictability, Cash Predictability, Conservatism, and Timeliness. The other earnings attributes also exhibit differences in the same direction but are not statistically different.

Tables 2 and 4 present results consistent with the lack of oversight from regulators and underwriters having an effect on financial reporting quality. Next, I examine whether institutional investors provide a similar effect in the absence of regulators and underwriters. I take the top quartile of reverse mergers based on institutional ownership percentage and their matched IPO counterparts from the propensity score matched procedures described earlier and test for statistical differences in their earnings quality. While Table 4 shows weaker earnings quality for reverse mergers across nearly all proxies, Table 5 shows that only Cash Predictability and Relevance exhibit weaker earnings quality for reverse merger with a strong institutional investor base firms compared to matched IPO firms. While failure to reject the null is not statistical evidence to support it, the differences in earnings quality from the full sample are attenuated for reverse mergers with strong institutional ownership.

5.4 China

In April 2011 SEC commissioner Luis Aguilar expressed concern that Chinese companies using reverse mergers to enter U.S. public markets appear to have systematic concerns with their quality of financial reporting. In recent years, there has been a large increase in Chinese reverse mergers (PCAOB, 2011). The Public Company Accounting Oversight Board (PCAOB) reported 159 Chinese reverse mergers from January 1, 2007 to March 31, 2010. During that same time period, only 56 Chinese IPOs were completed in the U.S. Mary Schapiro,

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[23] Results are similar using top and bottom quintiles or deciles.

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Table 5 Earnings Quality – Institutional Investors - Propensity score matched

Panel A

Accounting-based Attributes	Reverse Merger	IPO	Difference
Accrual Quality	0.45	0.26	-0.19
			(0.21)
Earnings Persistence	0.15	0.41	-0.26
			(0.18)
Earnings Predictability	4.24	2.70	-1.54
			(0.24)
Cash Persistence	0.40	0.74	-0.34
			(0.20)
Cash Predictability	1.21	0.12	-1.09***
			(0.00)
Earnings Smoothness	3.07	4.60	1.53**
			(0.05)

P-Values are in parenthesis for the bootstrapped test results. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.

Accrual Quality is the standard deviation of the residual from the regression of accruals on future year, current year, and previous year's cash flows from operations. Earnings Persistence is the estimated coefficient on previous year's net income from a regression of current net income on previous year's net income. Earnings Predictability is the standard deviation of the residual from the Earnings Persistence regression. Cash Persistence is the estimated coefficient on previous year's operating cash flows from a regression of current operating cash flows on previous year's cash flows from operations and accruals. Cash Predictability is the standard deviation of the residual from the Cash Persistence regression. Earnings Smoothness is the standard deviation of net income scaled by lagged assets divided by the standard deviation of cash flows scaled by lagged assets. All continuous variables are winsorized at the top and bottom 1% to mitigate the effect of outliers.

Panel B

Market-based Attributes	Reverse Merger	IPO	Difference
Conservatism	0.60	0.31	0.29
			(0.43)
Timeliness	0.24	0.37	-0.13
			(0.36)
Relevance	0.02	0.11	-0.09***
			(0.01)

P-Values are in parenthesis for the bootstrapped test results. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.

Conservatism is measured as the t-stat of the coefficient on the interaction term, NEG*RET, in a regression of net income on a dichotomous variable equaling one if the company's annual return is negative and zero otherwise, the company's annual return, and the interaction of the dichotomous variable (NEG) and the company's annual return (RET). Timeliness is the adjusted R squared from the Conservatism regression. Relevance is the adjusted R squared from a regression of annual returns on net income and change in net income. All continuous variables are winsorized at the top and bottom 1% to mitigate the effect of outliers.

SEC Chairman, and Kara Brockmeyer, co-head of an SEC working group examining foreign based firms with stock traded only the U.S., noted that several Chinese firms halted trading in 2011 and/or had their auditors resign (USA Today 2011). However, a portion of these firms are likely Chinese IPOs.[24]

He et al. (2012) and Darrough et al (2012) find the recent accounting scandals of Chinese reverse mergers have a spillover effect to U.S. listed Chinese IPOs. Chen et al. (2012) and Givoly et al. (2012) find lower financial reporting quality of Chinese reverse merger firms. However, Lee et al. (2013) find little evidence that Chinese reverse mergers are systematically riskier or more problematic.

I perform a difference in differences research design to examine whether Chinese reverse mergers exhibit differential financial reporting quality. I divide my propensity score matched population into two subpopulations: (1) Chinese reverse mergers with their matched IPO firms, and (2) U.S. and other[25] reverse mergers with their matched IPO firms. First, I test whether the Chinese reverse mergers exhibit differential financial reporting quality than their matched IPO counterparts. In Table 6, Chinese reverse mergers only exhibit lower reporting quality than their matched IPO firms for Cash Persistence, Conservatism, and Timeliness (as depicted by a negative and significant figures under the column titled 'China – Match'). Next using all other reverse mergers I find lower financial reporting quality than their matched firms for all measure except for Earnings Smoothness, Conservatism, and Timeliness (results located in the 'NonChina – Match' column). Finally I perform a difference in differences technique to test whether the difference between the Chinese reverse mergers and matched pairs is different from

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[24] NYG Group (nyggroup.com/library/benjaminweyarticleipo.pdf) reports that during the first 10 months of 2011, 29 China based companies delisted from U.S. stock exchanges due to regulatory concerns or voluntary delistings and that 15 of them were IPO firms.

[25] Of the 440 firms in my reverse merger population, 144 are Chinese firms and 20 are located in other countries outside the U.S.

Table 6 Earnings Quality – China – Difference in Differences

Panel A

Accounting-based Attributes	China – Match	IPO	Difference
Accrual Quality	0.01	-0.64***	0.64***
			(0.00)
Earnings Persistence	0.11	-0.37***	0.48
			(0.17)
Earnings Predictability	1.81	-5.53***	7.35***
			(0.01)
Cash Persistence	-0.33***	-0.35***	0.02
			(0.46)
Cash Predictability	-0.06	-1.63***	1.57***
			(0.01)
Earnings Smoothness	3.35	-1.83	5.19***
			(0.01)

P-Values are in parenthesis for the bootstrapped test results. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.

Accrual Quality is the standard deviation of the residual from the regression of accruals on future year, current year, and previous year's cash flows from operations. Earnings Persistence is the estimated coefficient on previous year's net income from a regression of current net income on previous year's net income. Earnings Predictability is the standard deviation of the residual from the Earnings Persistence regression. Cash Persistence is the estimated coefficient on previous year's operating cash flows from a regression of current operating cash flows on previous year's cash flows from operations and accruals. Cash Predictability is the standard deviation of the residual from the Cash Persistence regression. Earnings Smoothness is the standard deviation of net income scaled by lagged assets divided by the standard deviation of cash flows scaled by lagged assets. All continuous variables are winsorized at the top and bottom 1% to mitigate the effect of outliers.

Panel B

Market-based Attributes	Reverse Merger	IPO	Difference
Conservatism	-2.70**	0.35	-3.05*
			(0.07)
Timeliness	-0.25***	-0.08	-0.16
			(0.11)
Relevance	-0.12	-0.16**	-0.04
			(0.50)

P-Values are in parenthesis for the bootstrapped test results. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.

Conservatism is measured as the t-stat of the coefficient on the interaction term, NEG*RET, in a regression of net income on a dichotomous variable equaling one if the company's annual return is negative and zero otherwise, the company's annual return, and the interaction of the dichotomous variable (NEG) and the company's annual return (RET). Timeliness is the adjusted R squared from the Conservatism regression. Relevance is the adjusted R squared from a regression of annual returns on net income and change in net income. All continuous variables are winsorized at the top and bottom 1% to mitigate the effect of outliers.

the difference between all other reverse mergers and their matched pairs. Results in the far right column indicate that the Chinese reverse mergers exhibit stronger reporting quality compared to their matched firms than do all the other reverse merger firms.[26]

6. Conclusion

Reverse mergers represent an alternative to IPOs for private companies wishing to go public. The frequency of reverse mergers has increased over the past decade to the point that they have outpaced IPOs. While many firms have used reverse mergers and successfully grown into large international firms, I find that reverse merger firms, on average, exhibit lower earnings quality than propensity score matched IPOs. Results are consistent with increased scrutiny of regulators and underwriters prior to going public having a significant impact on financial reporting. However, results are attenuated in reverse mergers with institutional ownership. Thus, this study informs about the role of regulators and institutional investors in the financial reporting process. Further, I find that Chinese reverse merger firms exhibit stronger financial reporting quality than U.S. domestic and other foreign reverse merger firms.

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[26] I also tested Chinese reverse mergers compared to all other reverse merger firms and found Chinese reverse mergers to exhibit stronger financial reporting quality.

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APPENDIX A: Reverse Merger Transaction

As described in the paper, a reverse merger occurs when a public shell company issues a sufficient number of shares to the shareholders of the private company to ensure the shareholders of the private company have a controlling ownership of the post-acquisition consolidated firm. The following is a brief example of how this transaction occurred between American Busing Corporation (ABC) and Giant Motorsports, Inc. (GM). ABC represents the public shell company with minimal assets and operations, while GM represents the private operating company.

1- ABC is incorporated on August 3, 2002 in the state of Nevada.
2- ABC filed From SB-2 on December 10, 2002.
3- ABC continues to file Form 10-KSB and Form 10-QSB up through the quarter ending November 30, 2003.
    a. Note: Up until this point all financial statement information reflects the assets, liabilities, equity, and operations of ABC.
4- ABC files Form 8-K on January 16, 2004 to announce the details of the reverse merger with GM.
    a. ABC issued 8,000,000 shares to GM in exchange for all the outstanding shares of GM. After the share issuance, ABC had a total of 10,425,000 shares outstanding. Therefore, the shareholders of GM owned 76.74% of the outstanding shares of ABC.
    b. ABC changed its name to GM
5- The company files Form 10-KSB under the name of GM on April 15, 2005 for the year ended December 31, 2004.
    a. All financial statements now reflect the accounting history of GM and no longer that of ABC.
        i. While the accounting history is now that of GM, see figure below for a reflection of the firm data that is tracked by Compustat. Year t refers to the year in which the merger takes place.

| | Year | t-3 | t-2 | t-1 | t | t+1 | t+2 | t+3 |

Shell - ABC   *Operating - GM*
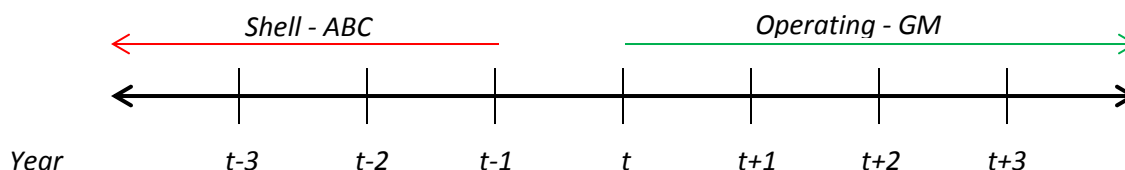
APPENDIX B: Summary of JOBS Act (McGladrey 2012)

The JOBS Act created a new class of company - the Emerging Growth Company (EGC) - effective immediately. A company may be considered an EGC if it had total annual gross revenues of less than $1 billion during its most recently completed fiscal year. The tables below summarize several changes to the financial reporting requirements of EGCs as a result of the JOBS Act.

Changes to the IPO Process for the Emerging Growth Company

Pre JOBS Act	Emerging Growth Company
Three years of audited financial statements	Two years of audited financial statements
Five years of selected financial data	Two years of selected financial data
Comply with new accounting standards as an issuer	Comply with new accounting standards in the same timeframe for a private company
Registration statement publicly filed	Confidential treatment available

The confidential treatment option could enable a company to delay exposure of sensitive competitive information until the certainty of an offering is confirmed. Likewise, the confidential treatment option permits the EGC to resolve accounting or disclosure issues with the SEC privately. The initial confidential submission and all amendments to the registration statements must be publicly filed at least 21 days prior to the IPO roadshow.

Post-IPO Changes for the Emerging Growth Company

Pre JOBS Act	Emerging Growth Company
Five years of selected financial data	Selected financial data is only required for those years starting with the earliest audited period included in the firm's initial financial statements
Comply with new accounting standards as an issuer	Comply with new accounting standards in the same timeframe for a private company
Comliance with Section 404(b) of the Sarbanes-Oxley Act of 2002 (auditor attestation on internal control over financial reporting) for accelerated filers	No auditor attestation required
Compliance with future PCAOB regulations	Exemption from prospective PCAOB regulations regarding auditor rotation and changes in auditor reporting as well as future regulations unless the SEC determines it is in the best interest of the public that the EGC comply
Compliance with current and future compensation disclosures	Compliance with the more limited compensation disclosure requirements available to a smaller reporting company (generally, less than $75 million in market capitalization). Exemption from certain current and prospective compensation disclosures such as advisory votes on say-on-pay and golden parachute provisions, among others