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# Earnings Quality and Corporate Governance in IPO Firms

Mary F. Calegari, *San Jose State University*
M. A Harjoto, *Pepperdine University*

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Mary F. Calegari, San Jose State University
Maretno A. Harjoto, Pepperdine University

*We determine earnings quality by examining the stability of earnings and its components (accruals and cash flows) using transition matrices. We find the accrual component exhibited greater instability compared to earnings and cash flows, suggesting earnings consisting primarily of accruals are of lower quality than earnings comprised primarily of cash flows. Using an ordered logit model, we find IPO firms are more likely to be in the top quartile of earnings and cash flows when they are older, larger, and have stronger corporate governance. Firms are more likely to report greater accruals when they are smaller and have weaker governance.*

## Introduction

Following the corporate scandals of 2002 and the passage of the Sarbanes-Oxley Act (SOX), changes that affected the corporate governance structure of firms were made to improve the quality of financial reporting. The advent of SOX provides evidence that corporate governance is viewed as an important factor that influences the firm's financial reporting process. Internal corporate governance mechanisms are established to maintain the credibility of the firm's financial statements and safeguard against behavior such as earnings management.

The initial public offering (IPO) process is particularly susceptible to earnings reporting options, offering entrepreneurs both motivation and opportunity to manage earnings. IPO firms have an incentive to window-dress their earnings in order to procure high stock prices. Also, at the time of the IPO, there is little publicly available information about these firms other than that contained in their prospectuses. Therefore, in evaluating an IPO firm's future prospects, investors must rely heavily on the integrity of the firm's financial reporting process and the disclosures made in its financial statements. These conditions provide IPO firms with the opportunity to choose the composition of their reported earnings.

IPO firms have the ability to determine the makeup of their reported earnings since earnings consists of two components: accrual and cash flow components. The earnings management literature indicates that firms can manipulate reported earnings through the accrual component by reporting aggressively higher short-term earnings that cannot be sustained in the future. Firms can report earnings in excess of cash flows by taking positive accruals. However, high earnings due to large positive accruals will not persist into the future and, therefore, lower the quality of the firm's financial reports [Sloan 1996]. Also, a low quality firm has a natural tendency to overstate earnings so that it can be pooled with high quality firms [Fan 2007].

The development of good corporate governance should result in quality earnings reporting. This is corroborated by Denise Nappier of Connecticut Retirement Plans and Trust Funds: "Sustainable corporate governance yields sustainable rates of returns." Johnna Torsone, an executive at Pitney Bowes, shares the same sentiment: "Sustained good governance has resulted in sustained good performance for us [Fishman-Lapin 2005]."

The purpose of this study is to examine the quality of earnings and corporate governance in IPO firms. First, we develop transition matrices to determine earnings quality by analyzing the stability of earnings and its accrual and cash flow components over the two years subsequent to the IPO. We find that IPO firms with earnings that are primarily attributable to the accrual component have low quality earnings since the accrual component is not sustainable into the future. In contrast, we find that IPO firms with earnings that are primarily attributable to the cash flow component have high quality earnings since the large cash flow component (both positive and negative) is sustainable into the future. When we examine total earnings, we discover that the firms in the top and bottom earnings quartiles have higher quality earnings compared to firms in the middle quartiles, due to the large cash flow component.

Second, we use ordered logit models to examine the effect of corporate governance factors on the likelihood that IPO firms will be in the top, middle, or bottom quartiles of earnings, accruals, or cash flows at the IPO and the
Subsequent two years.

We find that IPO firms are more likely to be in the top quartile of earnings and cash flows when they are older, larger and have stronger corporate governance. Also, firms with high cash flows do not need to conduct a seasoned equity offering to obtain more capital. On the other hand, IPO firms are more likely to be in the top accrual quartile when they are smaller and have weaker corporate governance. These firms also conduct seasoned equity offerings in order to obtain additional funding.

Our study offers three major contributions to the existing research. First, our paper extends the current literature by analyzing earnings, and its accrual and cash flow components of IPO firms. This differs from prior studies on IPO firms since they focus only on the accrual component of earnings and its relation to subsequent stock return performance [Teoh et al. 1998, DuCharme et al. 2001, Kimbro 2005, Fan 2007]. Second, to examine the quality of earnings, we create transition matrices that document the migration of the firms across the different quartile rankings for earnings, accruals and cash flows in the first and second year after the IPO. This behavior has not been documented in prior studies. Lastly, our findings support the adoption of SOX to improve corporate governance, which in turn will promote the quality of reported earnings.

## Literature Review

### Earnings, Accruals and Cash Flows

The concept of "earnings quality" embodies the degree to which reported earnings reflect the true operational health of a business. Prior research shows that firms with persistent earnings are assigned a greater value in their securities [Kormendi and Lipe 1987, Collins and Kothari 1989, Ali and Zarowin 1992]. Therefore, earnings persistence should reflect a higher quality of earnings

[Calegari and Harjoto 2005]. Prior studies use statistically motivated models in determining their measure of earnings persistence. Sloan [1996], on the other hand, uses a model that relies on the characteristics of the underlying accounting process. He decomposes earnings into its accrual and cash flow components.

Financial statement analysis textbooks emphasize the importance of analyzing the accrual and cash flow components of current earnings in assessing the persistence of future earnings. Cash flow from operations is less susceptible to distortion than net income. The accrual-based net income number relies on accruals, deferrals, allocations and valuations, which all involve a higher degree of subjectivity than what enters into the determination of cash flow from operations [Bernstein 1993]. Although both components contribute to current earnings, high performance that is attributable to the cash flow component of earnings is more likely to persist than high performance that is attributable to the accrual component [Sloan 1996].

## Earnings Management in IPO Firms

Financial accounting information plays a significant role in investors' decisions to purchase a company's stocks or bonds, thereby giving managers or initial owners strong incentives to present favorable earnings reports. Kellogg and Kellogg [1991] indicate that two driving forces for fraud, misrepresentation, and manipulation in financial statements are: (1) to encourage investors to buy an interest in a company's stock as owners, or in bonds as creditors; and (2) to increase the value of the stock of existing shareholders of the company. The National Association of Certified Fraud Examiners [1993] also states that a major reason for financial statement manipulation is "to encourage investment through the sale of stock" by incumbent shareholders. This evidence suggests that IPO firms have a strong motivation to manipulate earnings.

IPOs tend to be made by relatively young firms with limited operating histories. Generally, there is little publicly available information about these firms other than that contained in their prospectuses at the time of the IPO. Therefore, in evaluating an IPO firm's future prospects, investors must rely on the firm's disclosures made in the financial statements. This creates an informational asymmetry between the entrepreneur taking his firm public and potential investors. The asymmetric information provides IPO firms with the opportunity to manage earnings.

Teoh et al. [1998] examine the relation between the long-run post-IPO return underperformance and IPO firms' earnings management. They find that IPO firms with higher discretionary accruals have poorer stock return performance in the subsequent three years. Similarly, Fan [2007] finds that discretionary accruals are the highest in the IPO year and have strong predictive power for IPO firms' subsequent decline in operating performance. DuCharme et al. [2001] investigates the role of earnings management by issuers prior to making IPOs. Similar to earlier studies, they find that abnormal accruals during the offer year are significantly negatively related to subsequent firm stock returns. Contrary to this, Kimbro [2005] documents that pre-IPO A-firms in China from 1995-2002, on average, consistently used negative discretionary accruals during all years, in order to decrease earnings and reduce the initial price of their IPO.

The studies mentioned above only examine the relation between accruals and stock return performance. They do not consider the cash flow component of earnings, the subsequent

performance of earnings and its components, or the effect of corporate governance on the financial reporting process.

## Corporate Governance

Firms establish internal corporate governance processes to preserve the credibility of the firms' financial reporting process and financial statement disclosures, as well as to safeguard against such behavior as earnings manipulation. The board of directors is a crucial part of the corporate structure. The board provides the link between the providers of capital (shareholders) and those who use that capital to create value (managers). Fama [1980] theorizes that outside directors are essential to creating a board that will function as an effective monitor of management. Empirical evidence indicates that more independent board structures contribute to better monitoring of management and lead to better decision-making that follows shareholders' interests [Hochberg 2003, Reitenga and Tearney 2003]. The major committees involved in the governance of the firm are the audit and compensation committees. The role of the audit committee includes preventing fraudulent accounting statements, as well as mediating disputes between management and outside auditors regarding the application of Generally Accepted Accounting Principles. The compensation committee determines and reviews compensation packages for top management based on their efforts to increase the firm's value [Hochberg 2003].

The ownership structure of the firm may also influence top management's financial reporting decisions. Since external blockholders have large shareholdings, they could become effective monitors, reducing the likelihood of earnings management [Reitenga and Tearney 2003]. Warfield et al. [1995] find that managerial ownership is positively related to the informativeness of accounting earnings. They also find that the magnitude of discretionary accounting accrual adjustments is significantly higher when managerial ownership is low. Similarly, Fan [2007] finds evidence that riskier IPO firms resort to income-increasing earnings management and retain less ownership. This evidence suggests that managerial ownership mitigates earnings manipulation through accruals and increases earnings quality.

Various CEO characteristics provide CEOs with the incentive and opportunity to manage earnings to their advantage. CEO tenure and whether the CEO is the founder of the company measures the relative power of the CEO. When the chairman of the board is the CEO, management is accountable to a body led by management. The CEO is then put in the position of evaluating his or her own performance, creating a clear conflict of interest.

## Contribution of the Study

Our study contributes to the existing research in several ways. First, our paper extends the current literature by examining the quality of financial reporting of earnings and the accrual and cash flow components of earnings by IPO firms. By partitioning earnings into its accrual and cash flow components, we can determine which component is more susceptible to earnings management and influenced by corporate governance factors. This differs from prior studies on earnings management in IPO firms since they focus only on the accrual component of earnings and its relation to subsequent stock return performance [Teoh et al. 1998, DuCharme et al. 2001, Kimbro 2005, Fan 2007].

Second, we analyze the quality of earnings by examining the stability of earnings and its components for IPO firms that are ranked into quartile portfolios based on earnings, accruals, or cash flows. We create transition matrices that document the migration of the firms across the different quartile rankings for earnings, accruals, and cash flows, in the first and second year after the IPO. Higher stability of earnings reflects higher credibility of reported earnings. We investigate which quartile of firms is more likely to change its reported earnings and components of earnings. This behavior has not been documented in prior studies.

Lastly, we use an ordered logit regression to investigate the influence of corporate governance on the likelihood that IPO firms will be in the first, second, third, or fourth quartiles of earnings, accruals, or cash flows in the IPO year and two subsequent years.

## Sample, Data, and Variables

We utilize the sample of firms that went public during the peak period of IPOs (1996-1997). This peak period of IPOs provides a unique market environment and timeframe to examine the impact of corporate governance on the firms' financial reporting process prior to the burst of the stock market bubble and prior to SOX. We analyze the firms' reported earnings, and its accrual and cash flow components, for the IPO year and two subsequent years. We require that these firms survive at least two consecutive years after its IPO year since we are interested in the behavior of earnings and its components after the IPO.[1]

We manually collected the corporate governance data from the Security Exchange Commission (SEC) Edgar Web site. We obtained the earnings, earnings components and other financial information from Compustat. We then matched our sample of firms from the SEC Edgar Web site with the financial information from the Compustat database. Our sample is restricted to the availability of corporate governance data and financial information for the IPO year and two consecutive years after the IPO. Our final sample consists of 107 firms.

The financial variables of interest in this study are earnings, accruals, and cash from operations. "Earnings" is defined as operating income after depreciation. We select this definition because it excludes non-recurring items. The accrual component of earnings is computed using information from the balance sheet and income statement, which is common in the earnings management literature [Dechow et al. 1995; Sloan 1996].

$$\text{Accruals} = (\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD - \Delta TP) - Dep$$

where $\Delta CA$ = change in current assets, $\Delta Cash$ = change in cash/equivalents, $\Delta CL$ = change in current liabilities, $\Delta STD$ = change in debt included in current liabilities, $\Delta TP$ = change in income taxes payable, and Dep = depreciation and amortization expense. Debt in current liabilities is excluded from accruals because it relates to financing transactions as opposed to operating transactions. Income taxes payable is also excluded from accruals for consistency with the definition of earnings employed in the empirical tests. The cash flow component of earnings is computed as the difference between earnings and the accrual component of earnings. This methodology is similar to that used by Sloan [1996].

The empirical tests require cross-sectional and temporal comparisons of the magnitude of earnings performance and the relative magnitude of the accrual and cash flow components of earnings. Therefore, we standardize all three financial variables by firm size to facilitate the comparisons. We use total assets as our proxy for firm size, measured as the average of the beginning and end of year book value of total assets. The three financial variables we use in the empirical tests are defined as follows:

$$\text{Earnings} = \frac{\text{Income from Continuing Operations}}{\text{Average Total Assets}}$$

$$\text{Accrual Component} = \frac{\text{Accruals}}{\text{Average Total Assets}}$$

$$\text{Cash Flow Component} = \frac{\text{Income from Continuing Operations - Accruals}}{\text{Average Total Assets}}$$

The corporate governance variables we use in this study are as follows: (1) For board structure we use board size (BODSIZE), percentage of outside directors (ODPCTBOD), size of audit committee (AUDCOM), and size of compensation committee (COMPCOM); (2) for ownership concentration we use percentage of external blockholder ownership (EXTBLOCK) and percentage of total CEO ownership, including restricted stock grants (TOTCEOWN); and (3) for CEO characteristics we use a dummy variable that equals one if the CEO is the chairman of the board and zero otherwise (CEOCHAIR), a dummy variable that equals one if the CEO is the founder of the firm and zero otherwise (CEOFOUND), and CEO tenure (CEOTENUR).

We also control for the age of the company (YRFOUND), firm size (measured by the natural log of total assets) (LOGASSET), and whether the firm conducts a primary seasoned equity offering (SEO). Older firms tend to be more established and exhibit stronger and more stable earnings performance. Larger firms benefit from economies of scale and thus become more efficient and profitable. SEO is an indicator variable taking the value of one if the firm conducts a seasoned equity offering since firms may manage earnings upwards prior to an SEO.

We include a time trend variable (TREND) in our analysis. Since we are interested in investigating the behavior of earnings (and its accrual and cash flow components) over the two years subsequent to the IPO, this time trend variable captures any changes over time in earnings and its components. Lastly, to control for any industry effects, we include dummy variables that equal one if the firm belongs to one of the two-digit SIC codes 10 through 87 and zero otherwise (SIC10-87).

## Methodology

This study examines IPO firms during three different time periods: IPO date, one year after, and two years after the IPO. In each period, we classify the firms in our sample into four different quartiles based on earnings and the components of earnings (accruals and cash flows). We rank

earnings, accruals, and cash flows from the lowest quartile (Q1) to the highest quartile (Q4). To investigate the persistence of earnings, accruals, and cash flows from year to year, we use a transition (migration) matrix. The transition matrix is commonly used to examine the stability of borrowers' credit ratings in public debt [Nickell, Perraudin, Varotto 2000]. We construct the transition matrix to document the migration of firms' earnings, accruals, and cash flows across the different quartiles during the two-year period after the IPO. The transition matrix shows the percentage of firms that remain in the same quartile and the percentage of firms that move to different (terminal) quartiles during the first and second year after the IPO. The larger percentage of firms that stay within the same quartile indicates a higher stability of earnings, accruals, or cash flows during the first and second year after the IPO.

We continue our analysis of firms' earnings reporting and corporate governance by examining the impact of governance structure on the likelihood of firms' earnings and components of earnings to move up, stay, or move down across the four different quartiles. Using the ordered logit regression model, we want to examine the impact of corporate governance on the likelihood of IPO firms to be in the first, second, third, and fourth quartiles of earnings, accruals, or cash flows during the two years after the IPO. The dependent variable is a discreet variable that takes the value of 1 (bottom quartile, Q1), 2 (second quartile from the bottom, Q2), 3 (second quartile from the top, Q3), and 4 (top quartile, Q4) to represent the four quartiles. The ordered logit is suitable to express the order (ranking) of the bottom, second bottom, second top, and top quartiles. The ordered logit model allows us to investigate the impact of the firms' corporate governance structure on the likelihood of firms to move from the bottom to the top quartiles or vice versa. The ordered logit model can be defined as:

$$\text{Probability } (Y_t = j \mid x) = \text{Probability } (Y_t = j \mid x_1, x_2, x_3, \ldots, x_k)$$

where: Probability $(Y_t = j \mid x)$ represents the conditional probability of firms fall into the $j^{th}$ quartile at period t; t = at the IPO, one year after the IPO, and two years after the IPO; j = 1 (bottom quartile, Q1), 2 (second bottom quartile, Q2), 3 (second top quartile, Q3), and 4 (top quartile, Q4); $Y_t = 1$ if $Y_t \leq$ Q1 (bottom quartile); $Y_t = 2$ if Q1 $< Y_t \leq$ Q2 (second bottom quartile); $Y_t = 3$ if Q2 $< Y_t \leq$ Q3 (second top quartile); $Y_t = 4$ if $Y_t >$ Q3 (top quartile); and $x_1, x_2, x_3, \ldots, x_k$ are a set of independent variables of corporate governance, firm characteristics, time trend, and industry effects. We assume that the probability function follows the logistic distribution:

$$\text{Probability } (Y_t = 1 \mid x_1, x_2, x_3, \ldots, x_k) = L(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots + \beta_k x_k + \varepsilon_t)$$

where: $L(x) = \text{Exp}(x)/[1 + \text{Exp}(x)]$ is the logistics cumulative distribution for a set of independent variables; $\beta_1, \beta_2, \beta_3, \ldots, \beta_k$ are the estimated slope coefficients for each independent variable.

The empirical model for the ordered logit regression for IPO firm i is defined as: Probability $(Y_{it} = j \mid x) = L(\beta_0 + \beta_1 BODSIZE_{it} + \beta_2 ODPCTBOD_{it} + \beta_3 AUDCOM_{it} + \beta_4 COMPCOM_{it} + \beta_5 EXTBLOCK_{it} + \beta_6 TOTCEOWN_{it} + \beta_7 CEOCHAIR_{it} + \beta_8 CEOFOUND_{it} + \beta_9 CEOTENUR_{it} + \beta_{10} YRFOUND_{it} + \beta_{11} LOGASSET_{it} + \beta_{12} SEO_{it} + \beta_{13} TREND + \beta_{14\text{-}46} SIC10\text{-}87 + \varepsilon_{it})$

We estimate the ordered logit regression based on the above empirical model for earnings, accruals, and cash flows separately.

## Results

Table 1 reports the descriptive statistics of our sample of IPO firms ranked on earnings, the accrual component of earnings, and the cash flow component of earnings in the IPO year. Panel A presents the descriptive statistics for quartiles 1 (lowest) through 4 (highest) ranked on earnings in the IPO year. The cash flow component monotonically increases from quartiles 1 through 4 indicating a positive relation with earnings. Interestingly, the positive earnings in quartiles 3 and 4 are made up of negative accruals and positive cash flow components. This evidence suggests that firms in quartiles 3 and 4 have very strong cash flows to keep earnings positive. The descriptive results indicate that earnings for the top two quartiles are primarily attributable to the cash flow component and therefore more likely to persist into the future. A comparison of the firms in Q1 and Q4 indicates that IPO firms that report high positive earnings (Q4) have lower external monitoring, more powerful CEOs, and are older and larger compared to IPO firms in the bottom quartile (Q1) that report negative earnings. However, a comparison of the Q2 and Q3 firms suggests that the Q3 firms' earnings, cash flows, and age are significantly higher than the Q2 firms.

Panel B reports the descriptive statistics for the quartile portfolios ranked on the accrual component of earnings in the IPO year. Earnings monotonically increase from quartile 1 to quartile 4 indicating a positive relation with accruals. However, the cash flow component is negative for all four quartiles and has no association with the accruals. A closer look indicates that earnings is positive only in quartile 4 and is composed of positive accruals and negative cash flows. This suggests that earnings is primarily attributable to the accrual component and will not be able to persist in the future. A comparison of the Q1 and Q4 firms indicates that IPO firms that report large positive accruals (Q4) have lower external monitoring, longer-tenured CEOs, and are smaller and older than firms that report large negative accruals (Q1). The descriptive statistics suggest that the firms in the top accrual quartile have weak corporate governance. There are no significant differences between the Q2 and Q3 firms.

Panel C presents the descriptive statistics for quartiles 1 through 4 ranked on the cash flow component of earnings. Earnings monotonically increase from quartile 1 to quartile 4 indicating a positive relation between earnings and cash flows. However, the accrual component monotonically decreases from quartiles 1 through 4 suggesting a negative relationship between accruals and cash flows. Further examination reveals that the positive earnings in quartiles 3 and 4 consist of negative accruals and positive cash flows. This evidence implies that earnings for IPO firms in the third and fourth quartiles of cash flows are attributable primarily to the cash flow component. This suggests that the positive earnings performance will persist into the future. The comparative results for Q1 versus Q4 firms suggest that IPO firms that report large positive cash flows (Q4) are older, larger, have higher external monitoring, and higher CEO interest but lower CEO power compared to IPO firms that report large negative cash flows (Q1). These results suggest that the firms in the top cash flow quartile have good corporate governance. A comparison of the Q2 and Q3 firms indicates that the Q3 firms' earnings, cash flows, and size (logasset) are significantly higher than the Q2 firms.

Figure 1 provides plots of earnings, accruals, and cash flows ranked in quartile portfolios in the IPO year. Quartile 1 represents the lowest portfolio and quartile 4 the highest portfolio. As indicated in Table 1, earnings and cash flows have a very strong positive relationship, as the plots are almost identical.

## Table 1
## Descriptive Statistics

**Panel A: IPO Firms Ranked on Earnings in IPO Year**

| | Q1 | Q2 | Q3 | Q4 | Q2 vs. Q3 t-stat | Q1 vs. Q4 t-stat |
|---|---|---|---|---|---|---|
| Earnings | -0.569 | -0.040 | 0.090 | 0.122 | 14.944*** | 8.8779*** |
| Accrual component | -0.053 | -0.036 | -0.032 | -0.049 | 1.6161 | 4.3574*** |
| Cash flow component | -0.516 | -0.004 | 0.122 | 0.171 | 5.0600*** | 7.3488*** |
| BODSIZE | 6.720 | 7.039 | 6.573 | 6.600 | 0.3688 | 0.1407 |
| ODPCTBOD | 76.281 | 72.402 | 73.255 | 69.898 | 0.3786 | 2.3322** |
| AUDCOM | 2.627 | 2.421 | 2.707 | 2.653 | 1.6036 | 0.4819 |
| COMPCOM | 2.587 | 2.724 | 2.667 | 2.680 | 0.0887 | 0.8443 |
| EXTBLOCK | 27.680 | 25.755 | 22.103 | 15.295 | 1.3273 | 6.0742*** |
| TOTCEOWN | 10.773 | 8.771 | 12.305 | 21.088 | 0.3828 | 3.8017*** |
| CEOCHAIR | 0.366 | 0.386 | 0.655 | 0.571 | 0.7225 | 2.1965** |
| CEOFOUND | 0.467 | 0.303 | 0.293 | 0.467 | 0.1598 | 0.6462 |
| CEOTENUR | 4.520 | 3.816 | 4.413 | 7.400 | 0.9994 | 3.1639*** |
| YRFOUND | 7.000 | 6.737 | 9.733 | 13.240 | 1.9773** | 6.5945*** |
| LOGASSET | 3.703 | 4.381 | 4.689 | 4.526 | 1.1943 | 1.9163* |
| SEO | 0.134 | 0.024 | 0.143 | 0.143 | 1.3561 | 0.5194 |

**Panel B: IPO Firms Ranked on Accrual Component of Earnings in IPO Year**

| | Q1 | Q2 | Q3 | Q4 | Q2 vs. Q3 t-stat | Q1 vs. Q4 t-stat |
|---|---|---|---|---|---|---|
| Earnings | -0.182 | -0.130 | -0.074 | 0.057 | 1.2125 | 2.5097** |
| Accrual component | -0.108 | -0.031 | -0.014 | 0.089 | 1.3709 | 8.2542*** |
| Cash flow component | -0.074 | -0.099 | -0.059 | -0.029 | 0.8458 | 0.4591 |
| BODSIZE | 7.443 | 6.707 | 6.370 | 6.160 | 1.3966 | 3.4360*** |
| ODPCTBOD | 73.604 | 73.042 | 72.894 | 69.138 | 0.0736 | 2.2654** |
| AUDCOM | 2.709 | 2.561 | 2.494 | 2.605 | 0.8158 | 1.1277 |
| COMPCOM | 2.886 | 2.561 | 2.654 | 2.506 | 0.9413 | 3.8285*** |
| EXTBLOCK | 26.787 | 19.729 | 23.78 | 19.647 | 1.4573 | 2.7335*** |
| TOTCEOWN | 12.759 | 10.058 | 17.359 | 15.130 | 1.1371 | 1.1072 |
| CEOCHAIR | 0.510 | 0.5278 | 0.453 | 0.406 | 1.0945 | 1.5130 |
| CEOFOUND | 0.367 | 0.293 | 0.457 | 0.457 | 1.1830 | 1.1499 |
| CEOTENUR | 4.051 | 4.244 | 5.827 | 5.358 | 1.1987 | 1.7998* |
| YRFOUND | 8.785 | 8.415 | 8.395 | 11.346 | 0.0233 | 2.2162** |
| LOGASSET | 4.673 | 4.401 | 4.399 | 3.669 | 0.0087 | 3.5477*** |
| SEO | 0.067 | 0.102 | 0.113 | 0.104 | 0.2670 | 0.9413 |

**Table 1 (continued)**

**Panel C: IPO Firms Ranked on Cash Flow Component of Earnings in IPO Year**

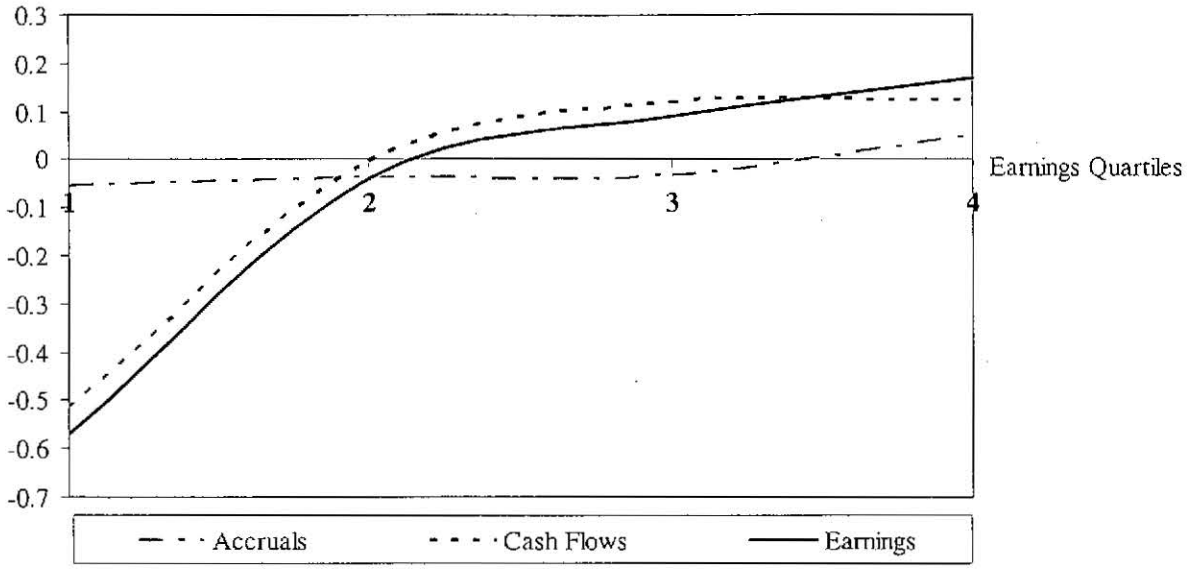
| | Q1 | Q2 | Q3 | Q4 | Q2 vs. Q3 t-stat | Q1 vs. Q4 t-stat |
|---|---|---|---|---|---|---|
| Earnings | -0.483 | -0.078 | 0.066 | 0.144 | 4.6993*** | 7.1321*** |
| Accrual component | 0.016 | -0.005 | -0.026 | -0.052 | 1.0919 | 3.2057*** |
| Cash flow component | -0.504 | -0.073 | 0.092 | 0.197 | 7.1116*** | 7.9929*** |
| BODSIZE | 6.259 | 6.289 | 6.5125 | 7.633 | 0.9709 | 3.6604*** |
| ODPCTBOD | 74.217 | 70.231 | 71.458 | 72.801 | 0.5719 | 0.7746 |
| AUDCOM | 2.518 | 2.506 | 2.625 | 2.721 | 1.3427 | 2.3768** |
| COMPCOM | 2.457 | 2.518 | 2.762 | 2.873 | 1.4898 | 4.2462*** |
| EXTBLOCK | 26.059 | 20.437 | 19.013 | 24.544 | 0.5778 | 0.5163 |
| TOTCEOWN | 8.913 | 16.311 | 15.572 | 14.377 | 0.2802 | 3.1519*** |
| CEOCHAIR | 0.377 | 0.472 | 0.585 | 0.461 | 1.6138 | 1.2347 |
| CEOFOUND | 0.457 | 0.397 | 0.437 | 0.278 | 0.5138 | 2.3633** |
| CEOTENUR | 4.111 | 5.506 | 4.650 | 5.215 | 1.1212 | 1.4403 |
| YRFOUND | 7.234 | 9.060 | 9.137 | 11.569 | 0.0718 | 4.7706*** |
| LOGASSET | 3.356 | 3.997 | 4.968 | 4.844 | 4.5559*** | 4.9783*** |
| SEO | 0.132 | 0.065 | 0.085 | 0.106 | 0.5565 | 0.5862 |

Note: Q1, Q2, Q3, Q4 represent quartiles from Quartile 1 (the lowest quartile) to Q4 (the highest quartile). Amounts represent mean values. Earnings, Accruals and Cash flow components of Earnings are defined in the Sample, Data, and Variables section of the text. BODSIZE indicates the number of board members. ODPCTBOD indicates the percentage of outside directors in the board (%). AUDCOM indicates the number of audit committee board members, while COMPCOM indicates the number of compensation committee board members. EXTBLOCK indicates the percentage of external (non-insiders and non-board members) blockholders ownership (%). TOTCEOWN is the percentage of CEO ownership (%). CEOCHAIR is a dummy variable taking on a value of one if the CEO is the chairman of the board and zero otherwise. CEOFOUND is a dummy variable taking on a value of one if the CEO is the founder of the firm and zero otherwise. CEOTENUR is the number of years since he or she became the CEO. YRFOUND indicates the firm's age since it was founded. LOGASSET is the natural log of assets. SEO is a dummy variable taking on a value of 1 if in that year the IPO firm conducted a primary seasoned equity offering (SEO) and zero otherwise.

* significant at 10%; ** significant at 5%; and *** significant at 1%

However, the accrual component tends to oscillate around zero, suggesting no strong relationship with earnings or cash flows. Closer investigation shows that only earnings for quartile 4 are comprised of both positive accruals and cash flows. This further indicates that earnings are more influenced by cash flows rather than accruals in our sample. Table 2 reports the transition matrices for earnings, accruals, and cash flows. Panel A presents the transition matrices for the earnings quartile portfolios. The majority of the firms in the top quartile (Q4) are able to sustain their strong earnings performance with 71 percent of the firms remaining in Q4 two years after the IPO.

**Figure 1**
**Earnings, Accruals, and Cash Flows Ranked in Quartiles in IPO Year**




Similarly, the firms in the bottom quartile (Q1) maintain their poor performance with 61 percent of the firms still in Q1 two years after the IPO. This persistence into the future is due to earnings being primarily attributable to the cash flow component (see Table 1, Panel A).

The firms in the middle quartiles (Q2 and Q3) exhibit more instability. In the second year after the IPO, only 43 percent of the Q2 firms remain in Q2 and only 40 percent of the Q3 firms remain in Q3. Interestingly, earnings performance for 46 percent of the Q3 firms declined to Q2 (28 percent) and Q1 (18 percent). This deterioration of earnings is probably due to the Q3 firms being unable to maintain positive cash flows in excess of negative accruals over the two years subsequent to the IPO. The Q3 firms had significantly higher cash flows than the Q2 firms in the IPO year, but there was no significant difference between the accrual components which were negative for both the Q2 and Q3 firms (see Table 1, Panel A). The results in Table 2, Panel A suggest that firms in the top and bottom earnings quartiles have higher quality earnings compared to the firms in the middle quartiles due to the larger cash flow component.

**Table 2**
**Transition Matrices for Earnings, Accruals, and Cash Flows**
**Panel A: Transition Matrices for Earnings**
**A.1: IPO Year to First Year After IPO (%)**

| Initial Quartile | Terminal Quartile | | | |
|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 |
| Q1 | 68 | 21 | 7 | 4 |
| Q2 | 25 | 54 | 14 | 27 |
| Q3 | 7 | 28 | 54 | 11 |
| Q4 | 0 | 0 | 18 | 82 |

**A.2: IPO Year to Second Year After IPO (%)**

| Initial Quartile | Terminal Quartile | | | |
|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 |
| Q1 | 61 | 18 | 14 | 7 |
| Q2 | 25 | 43 | 25 | 7 |
| Q3 | 18 | 28 | 40 | 14 |
| Q4 | 4 | 4 | 21 | 71 |

**Panel B: Transition Matrices for Accrual Component**

**B.1: IPO Year to First Year After IPO (%)**

| Initial Quartile | Terminal Quartile | | | |
|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 |
| Q1 | 52 | 28 | 12 | 8 |
| Q2 | 20 | 24 | 32 | 24 |
| Q3 | 16 | 36 | 28 | 20 |
| Q4 | 12 | 12 | 24 | 52 |

**B.2: IPO Year to Second Year After IPO (%)**

| Initial Quartile | Terminal Quartile | | | |
|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 |
| Q1 | 44 | 24 | 8 | 24 |
| Q2 | 24 | 36 | 24 | 16 |
| Q3 | 28 | 20 | 28 | 24 |
| Q4 | 8 | 20 | 32 | 40 |

**Panel C: Transition Matrices for Cash Flow Component**

**C.1: IPO Year to First Year After IPO (%)**

| Initial Quartile | Terminal Quartile | | | |
|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 |
| Q1 | 58 | 23 | 15 | 4 |
| Q2 | 28 | 40 | 28 | 4 |
| Q3 | 12 | 28 | 32 | 28 |
| Q4 | 4 | 13 | 17 | 66 |

**C.2: IPO Year to Second Year After IPO (%)**

| Initial Quartile | Terminal Quartile | | | |
|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 |
| Q1 | 54 | 31 | 11 | 4 |
| Q2 | 24 | 40 | 32 | 4 |
| Q3 | 8 | 20 | 48 | 24 |
| Q4 | 8 | 12 | 8 | 71 |

**Table 3**
**Ordered Logit Estimation Results**

| | (1) Earnings | | (2) Accruals | | (3) Cash flows | |
|---|---|---|---|---|---|---|
| | Coef. | z-stat | Coef. | z-stat | Coef. | z-stat |
| BODSIZE | -0.140 | 1.43 | -0.288 | 3.40*** | 0.356 | 3.21*** |
| ODPCTBOD | -0.008 | 0.78 | -0.013 | 1.17 | -0.008 | 0.74 |
| AUDCOM | -0.572 | 1.99** | -0.159 | 0.52 | -0.774 | 2.69*** |
| COMPCOM | 0.486 | 2.08** | -0.053 | 0.20 | 0.957 | 3.32*** |
| EXTBLOCK | -0.011 | 1.32 | 0.004 | 0.50 | 0.013 | 1.58 |
| TOTCEOWN | 0.032 | 2.60*** | 0.016 | 1.52 | 0.024 | 2.22** |
| CEOCHAIR | -0.211 | 0.67 | -1.065 | 3.44*** | -0.446 | 1.43 |
| CEOFOUND | -0.577 | 1.85* | -0.080 | 0.26 | -0.320 | 1.05 |
| CEOTENUR | 0.090 | 2.27** | 0.073 | 1.90* | 0.034 | 0.97 |
| YRFOUND | 0.159 | 6.35*** | 0.030 | 0.99 | 0.133 | 5.19*** |
| LOGASSET | 0.358 | 2.56** | -0.256 | 2.13** | 0.677 | 5.26*** |
| SEO | 0.404 | 1.09 | 0.858 | 2.15** | -0.955 | 2.20** |
| TREND | -0.263 | 1.70* | 0.038 | 0.27 | -0.264 | 1.78* |
| Chi-square | 17,233 | | 22,807 | | 24,189 | |
| % of predicted correctly | 36.14% | | 33.64% | | 41.43% | |
| Pseudo R-square | 0.2731 | | 0.2007 | | 0.2325 | |
| Observations | 321 | | 321 | | 321 | |

(1) Ordered logit estimation results of firms ranked by earnings into quartile portfolios.
(2) Ordered logit estimation results of firms ranked by the accrual component of earnings into quartile portfolios.
(3) Ordered logit estimation results of firms ranked by the cash flow component of earnings into quartile portfolios.
BODSIZE indicates the number of board members. ODPCTBOD indicates the percentage of outside directors in the board (%). AUDCOM indicates the number of audit committee board members, while COMPCOM indicates the number of compensation committee board members. EXTBLOCK indicates the percentage of external (non-insiders and non-board members) blockholders ownership (%). TOTCEOWN is the percentage of CEO ownership (%). CEOCHAIR is a dummy variable taking on a value of one if the CEO is the chairman of the board and zero otherwise. CEOFOUND is a dummy variable taking on a value of one if the CEO is the founder of the firm and zero otherwise. CEOTENUR is the number of years since she or he became the CEO. YRFOUND indicates the firm's age since it was founded. LOGASSET is the natural log of assets. SEO is a dummy variable taking on a value of one if in that year the IPO firm conducted a primary seasoned equity offering (SEO) and zero otherwise. TREND is the time trend that takes on the value of zero at the year of IPO, one for one year after the IPO and two for two years after the IPO. The estimated slope coefficients for the industry dummies (two-digit SIC) are not reported.
* significant at 10%; ** significant at 5%; and *** significant at 1%

Panel B reports the transition matrices for the accrual component of earnings. For the firms with the highest accruals in the IPO year, 40 percent of the firms are still in the top quartile (Q4) in the second year after the IPO. Similar results are found for the bottom quartile (Q1) firms. This evidence suggests that firms with extreme accruals are unable to maintain the accruals in the future. This migration is even more pronounced in the middle quartiles (Q2 and Q3) where only 36 percent (Q2) and 28 percent (Q3) of the firms are able to remain in the same quartile in the second year after the IPO.

The results in Panel B imply that firms with earnings that are primarily attributable to the accrual component have low quality earnings since the accrual component is not sustainable into the future. The migration of the Q2 and Q3 firms is more pronounced since there are no significant differences between the two quartiles (see Table 1, Panel B).

The transition matrices for the cash flow component quartile portfolios are shown in Panel C. The majority of the firms in the top quartile (Q4) of cash flows are able to sustain their high level of cash flows with 71 percent of the firms remaining in Q4 two years after the IPO. Of the firms with the largest negative cash flows in Q1, 54 percent remain in Q1 two years subsequent to the IPO. Similar to the results in Panels A and B, the firms in the middle quartiles are much more unstable. Two years after the IPO, 40 percent of the Q2 firms remain in Q2 and 48 percent of the Q3 firms remain in Q3. Contrary to the findings in Panel A, only 28 percent (versus 46 percent for total earnings) of the Q3 firms declined to Q2 (20 percent) and Q1 (eight percent). This is probably due to the negative relationship between cash flows and accruals (see Table 1, Panel C). The Table 2, Panel C results indicate that firms with earnings that are primarily attributable to the cash flow component have high quality earnings since the large cash flow component (both positive and negative) is sustainable into the future.

The ordered logit estimation results are reported in Table 3. Since the model is non-linear, we concentrate on the sign and statistical significance of the slope estimates. The results from the ordered logit model connotes the effect of corporate governance factors on the likelihood that an IPO firm will be in the first, second, third, or fourth quartile of earnings, accruals, or cash flows.

Column (1) presents the results of firms ranked into quartile portfolios by earnings. We find that the size of the compensation committee, percentage of CEO ownership, CEO tenure, firm age and asset size are positive and significant; however, the size of the audit committee and CEO as founder of the company are negative and significant. These findings suggest that firms are more likely to be in the top quartile of earnings (Q4) when they have larger compensation committees but smaller audit committees, higher CEO ownership and tenure, a founder who is not the CEO, and are older and larger.

The results for firms ranked into quartile portfolios by the accrual component of earnings are reported in column (2). We find that board size, CEO as chairman of the board, and firm size are negative and significant, and CEO tenure and seasoned equity offering are positive and significant. These results indicate that firms are more likely to be in the top accrual quartile (Q4) when they have smaller boards, the CEO is not the chairman of the board, and smaller. However, the top accrual firms have longer-tenured CEOs and are more likely to conduct a primary seasoned equity offering.

Column (3) presents the results for firms ranked into quartile portfolios by the cash flow component of earnings. We find that the size of the board and compensation committee, percentage of CEO ownership, firm age and size are positive and significant. In contrast, size of the audit committee and seasoned equity offering are negative and significant. These findings imply that firms are more likely to be in the top cash flow quartile (Q4) when they have larger boards and compensation committees, but smaller audit committees, higher percentage of CEO ownership, and are older and larger. However, these firms are less likely to conduct a seasoned equity offering.

In summary, IPO firms are more likely to be in the top quartile of earnings and cash flows when they are older, larger, and have stronger corporate governance. These firms also have higher quality earnings that are sustainable into the future. Additionally, IPO firms with high cash flows do not need to conduct a seasoned equity offering to obtain more capital. On the other hand, IPO firms are more likely to be in the top accrual quartile when they are smaller and have weaker governance. These firms were also found to have lower quality earnings since they were not able to maintain the high accruals into the future. Moreover, these firms conduct seasoned equity offerings in order to raise additional funding.

## Conclusion

This paper examines the quality of reported earnings and corporate governance in IPO firms. We define the quality of earnings as the stability and the likelihood of earnings, and its accrual and cash flow components, to fall within four different quartiles. In the IPO year and two subsequent years, we form quartile portfolios by ranking the IPO firms on earnings, accruals, and cash flows, where quartile 1 consists of the lowest and quartile 4 consists of the highest earnings, accruals, or cash flows. First, we create transition matrices for each of the quartile portfolios to determine the stability of earnings, accruals, and cash flows across the different quartiles in the two-year period after the IPO. Second, we use an ordered logit model to analyze the effect of corporate governance factors on the likelihood that IPO firms will be in the first, second, third, or fourth quartiles of earnings, accruals, and cash flows in the IPO year and two following years.

Our analysis of the transition matrices indicates that the accrual component is much more unstable than earnings and the cash flow component. This is consistent with Sloan [1996], who finds that current earnings is less likely to persist into the future if it is attributable primarily to the accrual component of earnings, as opposed to the cash flow component. We also find that firms in the second and third quartiles have a higher probability of migrating to a different quartile in the two years following an IPO than firms in the top and bottom quartiles. This suggests that firms in the top and bottom quartiles in the IPO year, particularly for earnings and cash flows, are more likely to sustain the same reporting procedures during the two years after the IPO.

The estimation results of our ordered logit model indicate that IPO firms are more likely to be in the top quartile of earnings and cash flows when the firms are larger and have a stronger governance structure. We find that IPO firms have a greater probability of having the highest reported accruals when they are smaller with weaker governance, and are more likely to raise additional funding through seasoned offerings. These findings indicate that governance structure influences the quality of reported earnings and its accrual and cash flow components. Overall, our findings provide supporting evidence that adoption of SOX, which enforces firms to have a stronger governance structure, should have a positive impact on the quality of firms' reported earnings.

## Endnotes

1. The two years after the IPO peak period (1998-1999) are just prior to the stock market crash of March 2000. We limit our sample to this period so as not to contaminate our findings with the impact of the stock market downturn in the United States in the years following our sample period. Also, our study focuses on the corporate governance structure and financial reporting of IPO firms prior to the corporate scandals and reform initiatives.

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